

**TENDER COVER PAGE**

MBD 1

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF JOHANNESBURG WATER**BID NUMBER: JW 14335****CLOSING DATE: 24 AUGUST 2023****CLOSING TIME: 10:30 AM****DESCRIPTION: SUPPLY AND INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2****CIDB REQUIREMENTS: TENDERERS SHOULD HAVE A CONTRACTOR CIDB GRADING OF 8CE OR HIGHER**

BRIEFING SESSION	COMPLUSARY
BRIEFING DETAILS	DATE AND TIME: 26JULY 2023 AT 10:30 AM ADDRESS : TURBINE HALL, 65 NTEMI PILISO STREET, NEWTOWN, JOHANNESBURG, 2001 VENUE : AUDITORIUM TENDERS RECEIVED FROM BIDDERS THAT DID NOT ATTEND A COMPULSORY BRIEFING SESSION WILL BE DISQUALIFIED
TENDER SUBMISSION DETAILS	BID DOCUMENTS MUST BE DEPOSITED IN THE TENDER BOX SITUATED AT GROUND FLOOR IN JOHANNESBURG WATER ADDRESS: TURBINE HALL, 65 NTEMI PILISO STREET, NEWTOWN, JOHANNESBURG, 2001 PLEASE ALLOW SUFFICIENT TIME TO ACCESS JOHANNESBURG WATER OFFICES IN TURBINE HALL AND DEPOSIT YOUR TENDER DOCUMENT IN THE JOHANNESBURG WATER TENDER BOX SITUATED AT RECEPTION BEFORE TENDER CLOSING TIME. TIMES: THE BUILDING WILL OPEN 7 DAYS A WEEK FROM 06:00 UNTIL 18:00

BIDDER INFORMATION				
NAME OF BIDDER				
NUMBER OF BID SUBMITTED				
PHYSICAL ADDRESS				
TELEPHONE NUMBER				
CELLPHONE NUMBER				
E-MAIL ADDRESS				
VAT REGISTRATION NUMBER				
TAX COMPLIANCE STATUS	TCS PIN		MAAA No	
OTHER STATUS	COIDA Registration No		CIDB No	

EMPLOYER INFORMATION			
DEPARTMENT	PMU	DEPARTMENT	SCM
CONTACT PERSON	Roginal Musonda	CONTACT PERSON	Gcina Ndela
TELEPHONE NUMBER	011 688 6540	TELEPHONE NUMBER	011 688 1796
E-MAIL ADDRESS	roginal.musonda@jwater.co.za	E-MAIL ADDRESS	gcina.ndela@jwater.co.za



PART B TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.

ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE

1.2.

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.

2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.

2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.

2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO

3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES
☐ NO

3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?
☐ YES ☐ NO

3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?
☐ YES ☐ NO

3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?
☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.



NOTE: HARD COPY TENDER DOCUMENTS ARE AVAILABLE AT A COST OF R350.00 PER SET. DOCUMENTS DOWNLOADED FROM THE ETENDER PORTAL IS AT NO COST BUT MUST COMPLY WITH SUBMISSION REQUIREMENTS.

WITHOUT LIMITATION, JOHANNESBURG WATER TAKES NO RESPONSIBILITY FOR ANY DELAYS IN ANY COURIER OR POSTAL SYSTEM OR ANY LOGISTICAL DELAYS WITHIN THE PREMISES OF JOHANNESBURG WATER. JOHANNESBURG WATER LIKewise TAKES NO RESPONSIBILITY FOR OFFERS DELIVERED TO A LOCATION OTHER THAN THE TENDER BOX AS PER THE TENDER SUBMISSION DETAILS STATED IN THE TENDER. PROOF OF POSTING OR OF COURIER DELIVERY WILL NOT BE TAKEN BY JOHANNESBURG WATER AS PROOF OF DELIVERY. TENDER SUBMISSION DOCUMENTS MUST BE IN THE BOX BEFORE TENDER CLOSURE.

The current Johannesburg Water Supply Chain policy is applicable which is available on the JW website www.johannesburgwater.co.za

THE TENDERER IS ENCOURAGED TO SIGN THE TENDER SUBMISSION REGISTER WHEN SUBMITTING THEIR TENDERS.

**PLEASE ENSURE YOU SUBMIT 1 x ORIGINAL TENDER HARD DOCUMENT
(1X Original Tender document and 1X Electronic copy in memory stick/USB).**

Any documents required that are not submitted in the tender box at the deadline will be considered late.

The tenderer accepts that Johannesburg Water will not take responsibility for the misplacement or premature opening of the tender if the outer package is not sealed and marked as stated.

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

NAME OF CONTACT PERSON:

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

TENDER NOTICE AND INVITATION TO TENDER

To Johannesburg Water (SOC) Ltd invites the tenderer for the following:

CONTRACT NO.: JW14335

YEAR: JUNE 2023

PROJECT DESCRIPTION: SUPPLY AND INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

The tender document will be available in the form of a download from the Johannesburg Water website (www.johannesburgwater.co.za/supply_chain/tenders) starting from **14 July 2023**.

The Employer is Johannesburg Water

All tenders and supporting documents must be sealed and be placed in the Tender box on the ground floor of the Johannesburg Water by no later than **10:30 am** on **24 AUGUST 2023**.

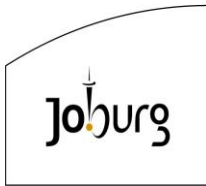
Address is as follows:

TURBINE HALL, 65 NTEMI PILISO STREET, NEWTOWN, JOHANNESBURG, 2001

Johannesburg Water (SOC) Ltd is not obliged to accept the lowest or any tender and the Johannesburg Water reserves:

- the right not to appoint the Highest Scoring Bidder.
- the right not to appoint any Bidder at all.
- the right to appoint more than one Bidder if the award and or allocation strategy allows.
- the right to appoint the bid in part / by item to various bidders if award and or allocation strategy allows.

A valid and binding contract will be concluded once Johannesburg Water has awarded the contract.



Contract JW14335
Description : Supply and Installation of
STS Prepayment Water Meters in Cosmo City – Phase 2
Volume 1 Tender and Contract
Section T1 Tender and Contract



Johannesburg Water SOC Ltd



CONTRACT NO: JW14335

SUPPLY AND INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

VOLUME 1

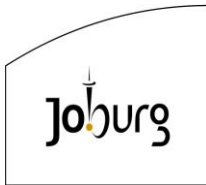
TENDER AND CONTRACT

Prepared by:
PMU
PO Box 61542
Marshalltown
2107

**V1.0
August 2018**



Employer:		Contractor:	
Witness:		Witness:	



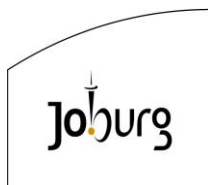
The Tenderer is to indicate in the “Submitted (Yes/No)” column in the below table that they have completed the required section of the tender document. Completion of this checklist will assist the Tenderer in ensuring that they have attended to all the required items for submission with this tender. Additionally, it is an absolute requirement that tenderers comply with National Treasury’s CSD registration as well as SARS tax compliance requirements for contract award – refer T2.2.4. The below will form part of the tender document, the tenderers are therefore encouraged to submit the returnable and or documentation with their tender offer to avoid elimination especially with regards to what is stated in the Required for Tender Evaluation column or not obtaining points for Specific Goals. Tenderers are encouraged to ensure that their Tax status remains Tax Compliant on CSD throughout the process to avoid delaying the process or being eliminated at award stage. For infrastructure related projects. Tenderer must have a CIDB Active Status at the requested CIDB requirement at evaluation stage to avoid disqualification.

All documentation listed in the Checklist below shall form part of the Contract.

Table 1

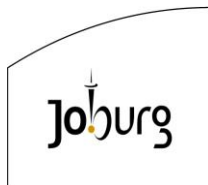
Ref	Description of Returnable/s or Documentation that will form Part of Contract and must therefore to be Completed and / or Submitted by the Tenderer	Required for Tender Evaluation	Required for Tender Award	Required After Tender Award	Submitted (Yes/No)
	Tender Cover:				
	Name of Tender	•			
	Contact Person	•			
	Telephone Number	•			
	Central Supplier Database Registration	•	•		
	CIDB Registration Number	•			
	COIDA Registration Number			•	
	Tax SARS PIN No.		•		
	MAAA No. for Tax Compliant Status		•		
	Mandatory Documents at Particular Stage:				
	CIDB grading 8CE or above, Tenderer must provide registration number and ensure that CIDB status is active.	•			
	Contractor to source an STS Meter supplier who will conform with the following certification as per the Legal Metrology Act of 2014: <ul style="list-style-type: none"> Valid SANAS accreditation certificate for verification body and a scope of accreditation SANS 1529 -9 Meter Type approval certificate Valid NRCS certificate of designation for verification body (In the event that the certificate has not been issued, an official letter confirming 	•			

Employer:		Contractor:	
Witness:		Witness:	



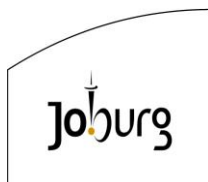
	<p>designation from NRCS must be submitted)</p> <ul style="list-style-type: none"> • Verification Officer Certificate certified for VG 1, VG 2 or C1, C3 or only VG 2 or only C3 <p>NB:</p> <ol style="list-style-type: none"> 1. The tenderer to submit a letter of support from their preferred Supplier/OEM for the supply of meters and provision of technical support during the duration of the project. 2. The tenderer must provide proof of Certificates from the OEM (Meter Manufacturer) of required certificates that comply with the Metrology Act of 2014. 3. The letter of support supporting the Tenderer must be from the OEM or from the Supplier/Distributor. The Supplier/Distributor must provide proof that they are the distributor of the OEM. <ul style="list-style-type: none"> • The Supplier/Distributor can be an Agent, Partner or proof that they have a relationship with the OEM 				
	Attendance of Briefing Meeting	•			
	Complete and sign the Form of Offer	•			
	Administrative Documentation:				
	MBD 1 - Invitation to Bid - Completed and signed	•	•		
T2.1	Signed Certificate of Authority to Sign	•			
T2.2.4	MBD 4 - Declaration of interest - Completed and signed	•	•		
	MBD 5 - Declaration for procurement above R10 Million (all applicable taxes included) Completed and signed.	•	•		
	MBD 6.1 - Preference Points Schedule – Specific Goals and Price Points - Completed and signed.	•			
T2.2.4	MBD 8 - Bidder's past supply chain management practices – Completed and signed.	•	•		
T2.2.4	MBD 9 - Certificate of Independent Bid Determination – Completed and signed.	•	•		
	Municipal Rates and Taxes for the	•	•		

Employer:		Contractor:	
Witness:		Witness:	



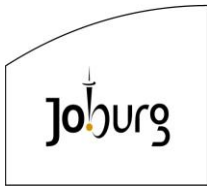
	<p>Company - Current municipal rates for the company not older than 90 days (if leasing/renting, submitted proof such as lease agreement where premises are rented), OR Confirmation that suitable arrangements are in place for arrear municipal obligations with your local municipality OR Current municipal rates which is not older than 90 days or valid lease agreement with affidavit from owner of property in cases stated in Proof of Good Standing with Regards to Municipal Accounts document in the Tender.</p>				
	<p>Municipal Rates and Taxes - Current municipal rates for the directors of the entity not older than 90 days (if leasing/renting, submitted proof such of lease agreement where premises are rented), OR Confirmation that suitable arrangements are in place for arrear municipal obligations with your local municipality OR Current municipal rates which is not older than 90 days or valid lease agreement with affidavit from owner of property in cases stated in Proof of Good Standing with Regards to Municipal Accounts document in the Tender.</p>	•	•		
	3-year financial statements (audited where applicable)	•	•		
	Any qualifications. If “Yes”, reference to such qualification/s must be indicated on a cover letter. Please be aware that alterations on the tender document may result in your tender being eliminated as the qualification may impede on the ability to evaluate like with like.	•			
	Functionality Documentation:				
	Documentary Evidence Required for Criteria 1 – JW Reference Template/ Reference letter with the letterhead of	•			

Employer:		Contractor:	
Witness:		Witness:	



	the previous employer.				
	Documentary Evidence Required for Criteria 2 – (CV) (Contracts Manager)	•			
	Documentary Evidence Required for Criteria 3 – (CV)- Site Agent	•			
	Documentary Evidence Required for Criteria 4 – (CV) Safety Officer	•			
	Specific Goals:				
	Business located within the boundaries of COJ Municipality -Proof of municipal account / valid lease agreement, letter from the Ward Council confirming the business address.	•			
	Business owned by 51% or more-Women -Valid BBBEE Certificate issued by SANAS accredited verification agency or DTI/CIPC BBBEE Certificate for Exempted Micro Enterprises or Affidavit sworn under oath, OR -CIPC registration document showing percentage of ownership and share certificate where applicable	•			
6.	Scope of Work				
	Scope of Work	•			
7.	Pricing Schedule:				
	Bill of Quantities	•			
8.	Terms and Conditions:				
	GCC(2015)	•			
	Contract Conditions	•			
	Special Conditions of Contract	•			
9.	Other Documents				
	Form of Acceptance, to be signed by the Contractor. Form of Acceptance to be completed by JW official.			•	
	Public Liability Insurance			•	
	Performance Guarantee			•	
	Valid Registration with Compensation for Occupation Injuries and Diseases Act			•	
	Resolution Letter for the Contractor's representative (a letter authorizing the person completing the tender to sign on behalf of the company) – if applicable		•		
	Comprehensive Health and Safety Plan (compliance with OHSE Specification - if applicable)			•	

Employer:		Contractor:	
Witness:		Witness:	



Contract JW14335
Description : Supply and Installation of
STS Prepayment Water Meters in Cosmo City – Phase 2
Volume 1 Tender and Contract
Section T1 Tender and Contract

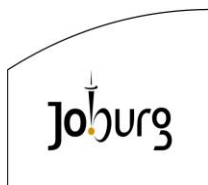


Tenderers will be notified of such missing and incomplete documents and will be offered a period of 3 days to complete or submit those pages i.e., Municipal Bidding Documents (MBD), authority to sign and other documents that require completion and signatures that do not have a bearing on functionality, price and preference points for specific goals.

Tenders that are received contrary to the above requirements will be disqualified after three (3) days period has lapsed.

If locality is a specific goal in MBD6.1 – the requested documentation may not be used to allocate points for specific goals.

Employer:		Contractor:	
Witness:		Witness:	



Contract JW14335
 Description : Supply and Installation of
 STS Prepayment Water Meters in Cosmo City – Phase 2
 Volume 1 Tender and Contract
 Section T1 Tender and Contract



Volumes	Contents	
Number	Number	Heading
Volume 1	Part 1: Tender Procedures	
	T1.1	Tender Data
	Part 2: Returnable Documents	
	T2.1	List of Returnable Documents
	T2.2	Returnable Schedules
	Part 1: Agreement and Contract Data	
	C1.1	Form of Offer and Acceptance
	C1.2	Contract Data
	C1.3	Forms of Securities
	Part 2: Pricing Data	
	C2.1	Pricing Instructions
	C2.2	Bill of Quantities
Volume 2A	Part 3: Scope of Work	
	C3	Scope of Work
Volume 2B		Particular Specifications
Volume 2A	Part 4: Site Information	
	C4	Site Information
Volume 3		Occupational Health and Safety Specification and Environmental Management Plan
Volume 4		Tender Drawings

Only Volume 1 and Volume 2A must be returned.

Employer:		Contractor:	
Witness:		Witness:	

Johannesburg Water (SOC) Ltd



CONTRACT NO. JW14335

**SUPPLY AND INSTALLATION OF STS
PREPAYMENT WATER METERS IN
COSMO CITY – PHASE 2**

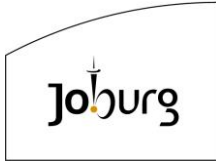
VOLUME 1

TENDERING PROCEDURES



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T1.1 TENDER DATA

T1.1.1 Conditions of Tender

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Construction Procurement (August 2019). (See www.cidb.org.za).

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

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

T1.1.2 Tender Data

The clause numbers in the Tender Data refer to the corresponding clause numbers in the Conditions of Tender.

The additional Conditions of Tender are:

Clause number	Tender Data
C.1.1	The Employer is, Johannesburg Water (SOC) Limited
C.1.2	<p>The tender documents issued by the Employer comprise:</p> <p>Volume 1:</p> <p>Part 1: Tendering Procedures</p> <p>T1.1 Tender Notice and Invitation to Tender</p> <p>T1.2 Tender Data</p> <p>Part 2: Returnable Documents</p> <p>T2.1 List of Returnable Documents</p> <p>T2.2 Returnable Schedules, including the Enterprise Declaration Affidavit which may be bound in a separate volume</p> <p>Volume 1:</p> <p>Part 1: Agreement and Contract Data</p> <p>C1.1 Form of Offer and Acceptance</p> <p>C1.2 Contract Data</p> <p>C1.3 Forms of Securities</p> <p>Part 2: Pricing Data</p> <p>C2.1 Pricing Instructions</p> <p>C2.2 Schedule of Rates</p> <p>Part 3: Scope of Work</p> <p>C3.1 Scope of Work</p> <p>C3.2 Particular Specifications</p> <p>Volume 2</p> <p>Occupational Health, Safety and Environmental Specification and Environmental Management Plan</p> <p>Volume :</p> <p>C4 Site Information</p> <p>Tender Drawings</p>



Clause number	Tender Data
C.1.4	<p>The Employer's representative is: Contact Person: Roginal Musonda Telephone: 011 668 6540 E-mail address: roiginal.musonda@jwater.co.za</p> <p>The SCM representative is Contact Person: Nthabiseng More Telephone: 011 688 1512 E-mail address: nthabiseng.more@jwater.co.za</p>
C.2.1	<p>Eligibility criteria and requirements CIDB registration and grading:</p> <ol style="list-style-type: none">1) Only tenderers who are registered with the CIDB and were capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for an 8CE class of construction work, are eligible to submit tenders. Tenders must have an Active status at the required CIDB grading at time of tender evaluation for the bidder to meet the eligibility criteria and requirement.2) Joint ventures are eligible to submit tenders provided that:<ol style="list-style-type: none">i) every member of the joint venture is registered with the CIDB; andi) the lead partner has a contractor grading designation in the 8CE class of construction work; orii) the combined contractor grading designation calculated in accordance with the CIDB Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for an 8CE class of construction work. <p>Failure to meet to Eligibility criteria and requirements will result in disqualification.</p>
C.2.7	<p>Tenderers should forward their contact details to the contact persons as stated on the tender Cover Page and invitation to tender so that they will be sent any communication pertaining to this tender.</p>
C.2.8	<p>Replace the contents of the clause with the following:</p> <p>"Request clarification of the tender documents, if necessary, by notifying the Employer's Officials indicated on the Tender Notice and Invitation to Tender in writing at least seven working days before the closing time stated in the foregoing notice and clause C.2.15."</p>
C.2.9	<p>Add the following to the clause:</p> <p>"Accept that the submission of a Tender shall be construed as an acknowledgement by the Tenderer that they are satisfied with the insurance cover, the Employer will affect under the contract."</p>
C.2.10.5	<p>Add the following to the clause:</p> <p>"If no offer is made for an item, a line must be drawn through the space in pen.</p> <p>All prices and details must be legible / readable to ensure the tender will be considered for adjudication."</p>

Clause number	Tender Data
C.2.11	<p>The evaluation on price alteration will be conducted as follows:</p> <p>Where the tender award strategy is to evaluate and award per item or category, the following must apply:</p> <ul style="list-style-type: none"> • If there is an alteration on the rate but no alteration on the total for the item or category, the bidder will not be disqualified • If there is an alteration on the total for the item/s without authentication, bidders will only be disqualified for alteration per item or category. <p>Where the tender award strategy is to evaluate and award total bid offer, the following must apply:</p> <ul style="list-style-type: none"> • If there is an alteration on the rate, total for the line item, sub-total/ sum brought/carried forward for the section but no alteration on the total bid offer, the bidder will not be disqualified. • If there is an alteration on the total bid offer on form of offer then the amount in words must be considered or vice-versa. • If there is an unauthenticated alteration on the total bid offer and the amount in words is not authenticated, the bidders will be disqualified for the entire tender. <p>Where the tender pricing schedule or bill of quantities is requesting rates/price from bidder/s without providing a total, the following will apply:</p> <ul style="list-style-type: none"> • (i) If there is an unauthenticated alteration on the unit rate/price the bidder must be disqualified. <p>Corrections may not be made using correction fluid, correction tape or the like.</p>
C.2.12.1	<p>Replace Contents</p> <p>Alternative offers will not be permitted.</p>
C.2.12.2	<p>Failure to complete and sign the form of offer in full will result in the elimination of the tender.</p>
C.2.13.3	<p>Each tender offer shall be submitted as an original. Tenderers are also requested to submit a soft copy in a USB (Tenderers who do not submit a soft copy will not be disqualified)</p>
C.3.9	<p>Replace Existing Clause</p> <p>Arithmetic Errors</p> <p>Construction related tenders</p> <p>JW undertakes to check the highest scoring bid for arithmetical errors and correcting them as follows:</p> <p>JW shall check for arithmetic errors using the following sequence:</p> <ol style="list-style-type: none"> Check the amount in words against the amount in figures on the <i>Form of Offer</i>, Check the Form of Offer against the Summary Schedule Total, Check the Section Sub-Totals per section against the Summary Total for summation errors, Check the Section Sub-Totals in the Summary Schedule against Section Sub-Totals in the Bill of Quantities. Check the Section Sub-Totals against the Item Totals for summation errors.



Clause number	Tender Data
	<p>(vi) Check the Item Totals against the product of the Item Rate and the Quantity Provided.</p> <p>If a bill of quantities or price schedule applies JW will request the bidder to correct the arithmetic errors as follows:</p> <p>(i) In respect of the Form of Offer, where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern. The bidder must be requested to adjust the amount in figures to correspond with the amount in words.</p> <p>JW will notify the tenderer of all errors or omissions that are identified in the tender offer and either request the tenderer to confirm the offer as tendered or JW will accept the corrected total of prices. Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:</p> <p>(i) 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.</p> <p>(ii) 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 requested to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.</p> <p>Clarification session(s) shall be held with Tenderer where there is pricing discrepancies, errors are highlighted and identified corrections are explained.</p> <p>Tenderer is afforded an opportunity to provide clarification, accept or reject identified corrections in writing.</p> <p>(i) In the event that the Tenderer accepts identified corrections, JW will proceed with evaluation.</p> <p>(ii) In the event that the Tenderer rejects the identified correction(s), JW must review the Tenderer's motivation and risks associated with the proposed change.</p> <p>This is not an opportunity for Tenderers to change the bid offer. A bidder that does not agree to the above will be disqualified.</p> <p>Risk related to the Arithmetic Corrections shall be assessed. Where risks are identified, tenderers shall provide JW with any other material or information that has a bearing on the tender offer, the tenderer's commercial position (including joint venture agreements), quotations preferencing arrangements or samples of materials considered necessary by JW for the purpose of a full and fair risk assessment.</p> <p>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 JW request, or fails to attend any meeting in which it has been formally invited to clarify any issue, the tender offer will be regarded as non-responsive.</p>



Clause number	Tender Data
C.2.13.5	<p>The Employer's address for delivery of tender offers and identification details to be shown on the Tenderer's offer package are:</p> <p>Location of tender box: Ground Floor Entrance</p> <p>Physical address: Johannesburg Water (SOC) Ltd Turbine Hall 65 Ntemi Piliso Street Newtown Johannesburg 2001</p> <p>Identification details: Tender reference number, Title of Tender and the closing date and time of the tender, <i>as well as the Tenderer's name, their Authorised Representative's name, postal address and telephonic contact numbers.</i></p>
C.2.13.6 & C.3.5	A two-envelope procedure will not be followed.
C.2.15.1	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.
C.2.16	The tender offer validity period is 90 days.
C.2.16.1	<p>Add the following to the clause :</p> <p>"If the tender validity expires on a Saturday, Sunday or public holiday, the Tender Offer shall remain valid and open for acceptance until the closure of business on the following working day."</p>
C.2.19	The Tenderer must provide access during working hours to his premises for inspections on request.
C.2.23	<p>The Tenderer is required to submit with his tender:</p> <ol style="list-style-type: none"> 1) Valid SARS Compliance status Pin for Tenders issued by the South African Revenue Services. 2) Proof of CSD registration i.e. MA xxxxxxxx number 3) A Certificate of Contractor Registration issued by the CIDB. 4) where the tendered amount inclusive of VAT exceeds R 10 million: <ol style="list-style-type: none"> i. audited annual financial statement for 3 years, or for the period since establishment if established during the last 3 years, if required by law to prepare annual financial statements for auditing; ii. if the bidder is not required by law to prepare financial statements, then the bidder is required to submit their unaudited financial statements prepared by an independent accounting professional. 5) Proof that the tenderer and directors of the tenderer are not in arrears for more than 90 days with municipal rates and taxes and municipal service charges, The latest municipal account is to be attached, or a signed copy of the valid lease agreement if the tenderer or director of the tenderer is currently leasing premises and not responsible for paying municipal accounts. <ol style="list-style-type: none"> i. Should the municipal statement that was submitted with the tender document before tender closing date and time be in arrears for more than 90 days at time of award, the tenderer will be requested to submit the latest municipal statement which shows that the tenderer is not in arrears for more than 90 days. If the



Clause number	Tender Data
	<p>statement at that time is in arrears for more than 90 days, the tenderer must submit before the stipulated deadline, the written proof of an approved arrangement with the municipality.</p> <ul style="list-style-type: none"> ii. The proof may be a copy of the agreement or an updated municipal statement which reflects the arrangement. iii. Should this tender be considered for award of the contract, based on proof of submission and should proof of such submission be found to be invalid, erroneous or inaccurate, the tenderer will no longer be considered for the award of the contract. iv. Statement must not be older than 90 days from the closing date of this tender. Attach latest municipal account statement behind this page. v. In cases where the director of the tenderer resides with their spouse, parent, partner or sibling the owner of the property that confirm where the director of the tenderer resides must submit an affidavit stating such and explaining the relationship. This would happen in the case where the submitted municipal statement or lease agreement is not in the name of the director of the tenderer. Point (i) will be applicable. vi. In cases where the business address of the tenderer is also the official residence of the director of the tenderer, the director of the tenderer must submit an affidavit stating such. Proof that the municipal statement is not in arrears for more than 90 days or a valid lease agreement must be submitted. Point (i) will be applicable. <p>6) Particulars of any contracts awarded to the tenderer by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract;</p> <p>7) A statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality or municipal entity is expected to be transferred out of the Republic.</p> <p>Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.</p>
C.2.24	<p>Add the following new clause:</p> <p>Canvassing and obtaining of additional information by tenderers Accept that no Tenderer shall make any attempt either directly or indirectly to canvass any of the Employers officials or the Employer's agent in respect of his tender, after the opening of the tenders but prior to the Employer arriving at a decision thereon. No Tenderer shall make any attempt to obtain particulars of any relevant information, other than that disclosed at the opening of tenders." ."</p>
C.2.25	<p>Add the following new clause:</p> <p>Prohibitions on awards to persons in service of the state Accept that the Employer is prohibited to award a tender to a person -</p> <ul style="list-style-type: none"> 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.

Clause number	Tender Data
	<p>“In the service of the state” means to be -</p> <ul style="list-style-type: none"> i) a member of:- <ul style="list-style-type: none"> • any municipal council; • any provincial legislature; or • the National Assembly or the National Council of Provinces; ii) a member of the board of directors of any municipal entity; iii) an official of any municipality or municipal entity; iv) an employee of any national or provincial department; v) provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999); vi) a member of the accounting authority of any national or provincial public entity; or vii) an employee of Parliament or a provincial legislature.” <p>In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in Section T2.1 must be completed.</p>
C.2.26	<p>Add the following new clause:</p> <p>Awards to close family members of persons in the service of the state</p> <p>“Accept that the notes to the Employer’s annual financial statements must disclose particulars of any award of more than R 2 000 to a person who is a spouse, child or parent of a person in the service of the state (defined in clause C.2.25), or has been in the service of the state in the previous twelve months, including</p> <ul style="list-style-type: none"> 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. <p>In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 – Returnable Documents must be completed in full and signed.”</p>
C.2.27	<p>Add the following new clause:</p> <p>Tax Compliance</p> <p>In the case of a Joint Venture/Consortium the tax Compliance status Pin must be submitted for each member of the Joint Venture/Consortium.”</p>
C.2.28	<p>Add the following new clause:</p> <p>Tenderers will be notified of such missing and incomplete documents and will be offered a period of three (3) days to complete or submit those pages i.e., Municipal Bidding Documents (MBD) and other documents that require completion and signatures that do not have a bearing on functionality, specific goals and price. Bidders that are received contrary to the above requirements will be disqualified after three (3) days period has lapsed. In cases where locality is a specific goal and the bidder did not submit the required documentation, the tenderer upon submitting the municipal statement, lease agreement or letter from ward councillor confirming business address as per above, may not be eligible for points under specific goals if such documentation was not submitted with the tender document.</p>
C.3.4.2	<p>Tenders will be opened in public soon after closing time and recording of received documents but not later than 11:00 at the tender office located at Turbine Hall, 65 Ntomi Piliso, Newtown, 2001, Ground Floor. Tenderers’ names and total prices, where practical will be, read out</p>

<u>Mandatory</u>		
NO.	MANDATORY CRITERIA	YES/NO
1.	CIDB grading 8CE or above, Tenderer must provide the CIDB registration number and ensure that CIDB status is active at the required grading at evaluation stage.	Active Status is required at the time of Evaluation
2.	Mandatory Tender Briefing Meeting.	Yes
3.	<p>Contractor to source a STS Meter supplier who will conform with the following certification as per the Legal Metrology Act of 2014:</p> <ul style="list-style-type: none"> Valid SANAS accreditation certificate for verification body and a scope of accreditation SANS 1529 -9 Meter Type approval certificate Valid NRCS certificate of designation for verification body (In the event that the certificate has not been issued, an official letter confirming designation from NRCS must be submitted) Verification Officer Certificate certified for VG 1, VG 2 or C1, C3 or only VG 2 or only C3 	<p>Yes</p> <p>The bidder must submit all the required certificates from their preferred meter supplier and other stated documentation</p>



		<p>NB:</p> <ol style="list-style-type: none"> 1. The tenderer's Supplier/Distributor must provide proof that they are the OEM or supplier/distributor of the OEM. 2. The tenderer to submit a letter of support from their preferred Supplier/OEM for the supply of meters and provision of technical support during the duration of the project. 3. The tenderer must provide proof of Certificates from the OEM (Meter Manufacturer) of required certificates that comply with the Metrology Act of 2014. <p>The Supplier/Distributor can be an Agent, Partner or any proof that they have a relationship with the OEM.</p>	
	4.	Complete and sign the Form of Offer	Yes
	<p>Tenderers who FAIL to meet the mandatory criteria or requirements of tender will result in disqualification.</p>		



Administrative

NO.	REFERENCE TO TENDER DOCUMENT	DESCRIPTION	REQUIREMENT
1.	Certificate of Authority	Certificate of Authority or Board Resolution granting authority to sign.	Completed and signed certificate of authority to sign or signed board resolution
2.	MBD 1	Invitation to Bid Form	Complete and submit complete and signed MBD 1 Form.
3.	CSD	Central Supplier Database Registration	Provide proof of CSD registration.
4.	MBD 3.1	Pricing Schedule – Firm Prices (Purchases)	Complete and submit complete and signed MBD 3.1 Form.
5.	MBD 4	Declaration of Interest	Complete and submit complete and signed MBD 4 Form.
6.	MBD 5	Declaration of Procurement Above R10m (All Applicable Taxes Included)	Complete and submit complete and signed MBD 5 Form.
7.	MBD 6.1	Preference Points Claim in Terms of The Preferential Procurement Regulations 2022	Complete and submit complete and signed MBD 6.1 Form.
8.	MBD 8	Declaration of Bidder's Past Supply Chain Management Practices	Complete and submit complete and signed MBD 8 Form.
9.	MBD 9.	Certificate of Independent Bid Determination	Complete and submit complete and signed MBD 9 Form.
10.	Annexure – Proof of Specific Goals	Valid BBBEE Certificate or certified copy thereof or a valid sworn affidavit	Submit applicable documentation with the tender submission
11.	Annexure	Municipal statement of account for Director/s (not older than three [03] months from the closing date of tender or a valid lease agreement at time of tender closure).	Submit applicable documentation with the tender submission



12.	Annexure	Municipal statement of account for Company (not older than three [03] months from the closing date of tender or a valid lease agreement at time of tender closure).	Submit applicable documentation with the tender submission
13.	Annexure	Joint Venture Consortium or equivalent Agreement signed by all parties.	Submit applicable documentation with the tender submission

Functionality

CRITERIA NO #	CRITERIA	EVIDENCE	SUB-CRITERIA/CLAUSE	MAX SCORE	SCORE
1.	Tenderer to have experience in meter installation projects	<p>The tenderer (Company) must provide reference letter as a proof of the required experience in the installation of meters.</p> <p>NB: The attached reference letter must be completed by the referee/client and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements as stated on this template. A separate form must be</p>	Number of meter installation projects completed	35	
			Tenderer has not completed any meter installation project		0
			Tenderer has completed one (1) meter installation project		14

			completed for each reference as required in the evaluation criteria.	Tenderer has completed two (2) meter installation project		24
				Tenderer has completed three (3) meter installation project.		28
				Tenderer has completed four (4) and more meter installation projects		35
2.	Experience-Contracts Manager–experience in construction projects.	<u>CV document</u>	Tender must Provide CV of Contract Manager in the format given on T2.1.9	Number of years of experience in construction projects		
	Only Contract Managers with qualifications of B-Tech/BEng or	Note: Tenderers may provide their own CVs but all information provided must be captured in T2.1.9		Less than seven (7) years' experience in construction projects	20	0
				Has seven (7) years or more but less than 8		14

		BSc Engineering (Civil) / Construction Management and Registration (Pr. Eng. / Pr.Tech.Eng) or PrCPM or Pr CM will obtain a score for experience of a Contracts Manager.	Note: Copy of qualifications to accompany the CVs NB: Own CV must contain the information required on the template provided to ensure that points can be obtained. Note: Tenderer to submit copy of qualifications required.	years' experience in constructions Projects.		
				Has eight (8) years or more but less than 10 years' experience in constructions Projects.		16
				10 years or more in Construction projects		20
	3.	Experience- Site Agent Experience in any water reticulation networks project. Only Site Managers with qualifications of National Diploma (Civil) Engineering or higher will obtain a score for experience of a	<u>CV document</u> Tenderer to complete attached CV template or submit own CV document Note: <ul style="list-style-type: none"> • Own CV must contain the information required on the template provided to ensure that points can be obtained. • Tenderer to submit copy of qualifications required. 	Number of projects in water reticulation networks	25	
				Less than three (3) projects in water reticulation networks		0
				Three (3) projects in water reticulation networks		18



		Site Agent if number of project requirements are met.				
				Four (4) projects in water reticulation networks		20
				Five (5) or more projects in water reticulation networks		25
4.	Experience-Safety Officer	<u>CV document</u>	Number of Construction Projects			
	National Diploma (Safety Management)/	Tenderer to complete attached CV template or submit own CV document	Less than two (2) Construction projects			0
	National Diploma (Environmental Health/Environmental Science/Environmental Management)	Note: <ul style="list-style-type: none">• Own CV must contain the information required on the template provided to ensure that points can be obtained.• Tenderer to submit copy of qualifications required.	Two (2) Construction projects	20		14
			Three (3) Construction projects			16
			Four (4) or more Construction projects			20
			MINIMUM QUALIFYING SCORE	70		



			TOTAL	100	
<p>NOTE 1: Where applicable, foreign qualifications MUST be accompanied by a SAQA verification certificate. Failure to submit SAQA verification certificate will lead to that qualification not being considered for allocation of points for that criterion.</p> <p>NOTE 2: When an uncertified copy of professional registration is submitted and the requirement was to submit a certified copy, JW will verify the validity of the registration on the issuing bodies or institution's website. If the verification is confirmed on the website, the bidder meets the criteria. This will only be applicable for the recommended bidders.</p> <p>SACPCMP: South African Council for the Project and Construction Management Professions</p> <p>SAMTRAC: Safety Management Training Course</p> <p>NEBOSH: National Examination Board in Occupational Safety and Health</p> <p>SHEOMTRAC: Safety Health Environmental Occupational Management Training Course</p> <p>SHEMTRAC: Safety Health Environmental Management Training Course</p> <p>MESHTRAC: Management Environmental Safety Health Training Course</p>					

4.Stage 4 Price and Preference Points Evaluation:

4.1. Pricing

The following aspects will be considered in the financial offer:

- a. Costing for all items as described in the Pricing Schedule and applicable Strategies
Review of financial offer and discrepancies between total and calculations.
- b. Identify any parameters that may have a bearing on the financial offer, e.g., contract period, price escalations or adjustments required and life cycle costs.
- c. The 90/10 preference point system will be applicable in this tender. Whereby 90 points will be allocated to price and 10 points will be allocated to the set specific goals per category as outlined on the pricing schedule. The bidder scoring the highest in terms of price and specific goal will be recommended for that specific category.

4.2. Award and Allocation Strategy:

AWARD STRATEGY	The tender will be awarded to the highest scoring bidder in terms of price and Specific Goals
ALLOCATION STRATEGY	The tender will be awarded to the highest scoring bidder in terms of price and Specific Goals

4.3. The maximum preference points for this bid are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	100

Specific Goals

In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations 2022, 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.

Specific goals may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability.

Race:

- I. Ownership by black people
- II. Black Designated Group:

Ownership by black people that are unemployed
 Ownership by black people who are youth
 Ownership by black people living in rural or underdeveloped areas or townships
 Ownership by black people with disabilities
 Ownership by black people who are military veterans
 Cooperative owned by black people

Gender:

- III. Persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of gender are women. Ownership by persons that are classified as female or women according to the Department of Home Affairs of South African.

Disability:

- IV. Persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of disability are disabled persons.

Reconstruction and Development Programme (RDP) objectives as published in Government Gazette No. 16085 dated 23 November 1994 i.e.,

Local Manufacture:

- I. Promotion of procurement of locally manufactured goods in South Africa to promote job creation in light of the high unemployment rate in South Africa which has a greater impact previously disadvantaged individuals and black youth.

Locality:

- I. Promotion of procurement from local business in the geographical areas that JW operate in. This is also directed at creating employment in the areas JW operate in. The BSC may allocate points as follows:

- Promotion of enterprises located in the Gauteng Province
- Promotion of enterprises located in a specific region within COJ (the 7 regions. A to G)
- Promotion of enterprises located in the City of Johannesburg municipality
- Promotion of enterprises located rural or underdeveloped areas or townships.

QSE

- I. Promotion of procurement from QSE's that are black owned.

EME:

- I. Promotion of procurement from EME's that are black own.

SUB-CONTRACTING:

Promotion of a company previously owned by a Historically Disadvantaged Individuals (HDI).

Consider sub-contract only in cases where there are no company which can meet any of the specific goals. Check if the portion of the work cannot be subcontracted in terms of specific goals.

One goal may be chosen, or a combination of goals may be decided upon including a sub-goal i.e., owned by black people that are disabled etc.,

JOINT VENTURE, CONSORTIUM OR EQUIVALENT:

For Joint Venture Agreements, Consortiums or equivalent, the agreement must show percentages of ownership and work to be completed by each party. This agreement must form part of the tender submission.

To determine the Joint Venture, Consortium or equivalent score for specific goals, JW will look at the consolidated BBEE certificate to determine the points for specific goals that will be awarded to the tenderer. If a consolidated BBEE certificate is not submitted, the parties to the joint venture, consortium or equivalent must submit their individual BBEE certificates issued by a SANAS accredited verification agency or the documents listed below on 4.6 and the joint venture, consortium or equivalent agreement in order for JW to determine the proportional points for specific goals.

Documentation to be provided:

- JV, Consortium, or equivalent agreement
- Consolidated BBEE certificate issued by an SANAS accredited verification agency. Certificate must be valid

Table 1:

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system)
Business located within the boundaries of COJ Municipality	7
Business owned by 51% or more-Women-	3
Total	10

4.4. The following verification documents must be submitted with the tender document:

SPECIFIC GOALS – ANY ONE OR A COMBINATION OF ANY	MEANS OF VERIFICATION THAT MAY BE SELECTED OR A COMBINATION THEREOF
Business located within the boundaries of COJ Municipality	<ul style="list-style-type: none"> • Proof of municipal account / valid lease agreement, letter from the Ward Council confirming the business address.
Business owned by 51% or more-Women-	Valid BBBEE Certificate issued by SANAS accredited verification agency or DTI/CIPC BBBEE Certificate for Exempted Micro Enterprises or Affidavit sworn under oath, OR <ul style="list-style-type: none"> • CIPC registration document showing percentage of ownership and share certificate where applicable Certificate for Exempted Micro Enterprises or Affidavit sworn under oath.
Joint Venture (JV), Consortium or Equivalent NOTE: Points for specific goals will be allocated proportionally depending on the percentage ownership/interest of each party.	<ul style="list-style-type: none"> • JV, Consortium or Equivalent agreement which must indicate percentage ownership/interest of each party, and • Certified copy a valid consolidated BBBEE certificate issued by SANAS accredited verification agency, and

4.5. The following are the requirements for the Sworn Affidavit in terms of the BBBEE Sector Codes of Good Practice:

Affidavit Prescribed Formats	Category	Financial Threshold
Generic Enterprises		
	BO QSE	Between R10m and R50m
	BO EME	Less than R10m
Sector Specific Enterprises		
	BO QSE	Between R10m and R50m
	BO EME	Less than R10m
Construction Sector Code		
	EME Contractor	Less than R3m

	BO EME BEP	Less than R1.8m
Financial Sector Code		
	BO QSE	Between R10m and R50m
	BO EME	Less than R10m
Information Communication Technology Sector Code (ICT)		
	BO QSE	Between R10m and R50m
	BO EME	Less than R10m
Marketing, Advertising & Communication Sector Code (MAC)		
> Public Relations	BO QSE	Between R5m and R10m
> Marketing, Advertising & Communications	BO EME	Less than R5m
Property Sector Code		
> Service-based	BO QSE	Between R5m and R10m
	EME	Less than R5m
> Agency-based	BO QSE	Between R2.5m and R35m
> Asset-based	EME	Less than R2.5m
	BO QSE	Between R80m and R400m
Tourism Sector Code		
	BO QSE	Between R5m and R45m
	BO EME	Less than R5m
Specialised Enterprises		
	BO QSE	Between R10m and R50m
	BO EME	Less than R10m

4.6. Requirements for a valid BBBEE Certificate

- Copy of a certified valid BBBEE certificate (Only Valid BBBEE certificate must be accredited by SANAS) or valid Sworn Affidavit issued by the DTIC or the CIPC or in a similar format complying with commissioner of oath Act.
- Bidders who do NOT qualify as EME's and QSE's as outlined in 5.5, must submit B-BBEE verification certificates that are issued by an Agency accredited by SANAS.
- Bidders who fail to submit a certified copy of their valid B-BBEE certificate or valid sworn affidavit or valid DTI / CIPC B-BBEE certificate will score zero points for specific goals.

Valid Sworn Affidavits or certified copies of B-BBEE Certificate must comply with the requirements outlined in the Justices of the Peace and Commissioners of Oaths Act, no 16 of 1963 and its Regulations promulgated in Government Notice GNR 1258 of 21 July 1972 Justices of the Peace and Commissioners of Oaths Act, No. 16 of 1963. **i.e.**

- The deponent shall sign the declaration in the presence of the commissioner of oaths (COA).

- (ii) Below the deponent's signature the COA shall certify that the deponent has acknowledged that he knows and understands the contents of the declaration and the COA shall state the manner, place, and date of taking the declaration.
- (iii) The COA shall sign the declaration and print his full name and business address below his signature; and state his designation and the area for which he holds his appointment, or the office held by him if he holds his appointment ex officio.
- (iv) Copy of certified copies will not be accepted.

N.B. A tenderer failing to submit proof of specific goals claimed as per 5.2 to 5.6 will not be disqualified but will be allocated zero points for specific goals and will be allocated points for pricing.

ADJUDICATION USING A POINT SYSTEM

- (a) The bidder obtaining the highest number of total points will be awarded the contract.
- (b) Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.
- (c) Points scored must be rounded off to the nearest 2 decimal places.
- (d) In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of points for specific goals.
- (e) However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for specific goals, the successful bid must be the one scoring the highest score for functionality.
- (f) Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

POINTS AWARDED FOR PRICE

THE 90/10 PREFERENCE POINT SYSTEMS

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

90/10

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

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

P_{\min} = Comparative price of lowest acceptable bid

Add to the existing clause:

Tender offers will only be accepted if:

- a) the tenderer submits a valid SARS tax Compliance status Pin for tenders issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations;
- b) Proof of CSD registration ie MA xxxxx number;
- c) the tenderer submits a letter of intent from an approved insurer undertaking to provide the Performance Guarantee to the format included in Part T2.2.22 of this procurement document
- d) the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;
- e) the tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
- f) 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;
- g) 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;
- h) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- i) the Employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely; and
- j) the tenderer:
 - i) has sufficiently substantiated his experience in this type work;
 - ii) has the required and experienced key personnel; and

Owns the primary equipment to effectively and efficiently execute the work

C.3.17 The number of paper copies of the signed contract to be provided by the Employer is one

There are no additional conditions of tender.

Johannesburg Water (SOC) Ltd



VOLUME 1

RETURNABLE DOCUMENTS AND SCHEDULES

T2.1 LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

<u>Document</u>	<u>Page</u>
1. Returnable Schedules required for tender evaluation purposes	
T2.1.1 Record of addenda to tender documents	RD.5
T2.1.2 Certificate of Authority	RD. 6
T2.1.3 Compulsory Enterprise Questionnaire	RD.11
T2.1.4 Preferential Procurement	RD.13
JW 6.1 (a) Special Conditions	RD.14
(b) Special Conditions of Subcontracting	
MBD 6.1 Preference points claim form in terms of the preferential procurement regulations	RD.20
MBD 4 Declaration of any potential conflict of interest	RD.28
MBD 8 Declaration of bidder's past Supply Chain management practices	RD.31
MBD 5 Declaration for Procurement above R10 Million (VAT Included)	RD.33
MBD 9 Certificate of independent bid determination	RD.35
T2.1.5 Proposed qualifications	RD.36
T2.1.6 Schedule of the Tenderer's experience	RD.37
T2.1.7 Contactable reference template	RD.39
T2.1.8 Schedule of key personnel	RD.41
T2.1.9 Curriculum vitae of key personnel	RD.43

T2.2 LIST OF RETURNABLE DOCUMENTS

<u>Document</u>	<u>Page</u>
2. Other documents required only for tender evaluation purposes	
T2.2.1 Certificate of Contractor Registration issued by the Construction Industry Development Board	RD.44
T2.2.2 SARS Tax Compliance Status Pin and Proof of CSD registration i.e. MA xxxxxxxxxx number	RD.45

T2.3 LIST OF RETURNABLE SCHEDULES

<u>Document</u>	<u>Page</u>
3. Returnable Schedules that will be incorporated into the contract	
T2.3.1 Imported content: forward exchange cover for imported goods	RD.50

T2.4 LIST OF RETURNABLE SCHEDULES

<u>Document</u>	<u>Page</u>
4. Other documents that will be incorporated into the contract	
T2.4.1 JW 6.4 Returnable Annexure A – SHE Acknowledgment Form	RD.53
T2.4.2 Returnable Annexure B: Acknowledgement of Tender Drawings	RD.54
 <u>Document</u>	 <u>Page</u>
C1.1 FORM OF OFFER AND ACCEPTANCE	C.1
 C1.2 CONTRACT DATA (PART 2)	 C.5
 C1.3 FORMS OF SECURITIES	 F.1
 C2.1 PRICING DATA	 PD.1
Bill of Quantities	PD.4-47
Summary of Bill of Quantities	PD.48

NOTE: The Tenderer is required to complete each and every schedule listed above to the best of his ability as the evaluation of tenders and the eventual contract will be based on the information provided by the tenderer.



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Contract No JW14335
Supply and Installation of STS Prepayment Water Meters in
Cosmo City – Phase 2



Volume 1 Tender and Contract
T2.1 and T2.3 List of Returnable Documents

T2.1 LIST OF RETURNABLE DOCUMENTS

<u>Document</u>	<u>Page</u>
1. Returnable Schedules required only for tender evaluation purposes	
T2.1.1 Record of addenda to tender documents	RD.5
T2.1.2 Certificate of authority	RD.6
T2.1.3 Compulsory Enterprise Questionnaire	RD.11
T2.1.4 Preferential Procurement	RD.13
T2.1.5 Proposed qualifications	RD.36
T2.1.6 Schedule of the Tenderer's experience	RD.37
T2.1.7 Contactable reference template	RD.39
T2.1.8 Schedule of key personnel	RD.41
T2.1.9 Curriculum vitae of key personnel	RD.43

T2.1.1 Record of Addenda to Tender Documents

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

	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Attach additional pages if more space is required.

Signed Date

Name Position

Tenderer

T2.1.2 Certificate of Authority

Indicate the status of the Tenderer by ticking the appropriate box hereunder. The Tenderer must complete the certificate set out below for the relevant category.

(I) COMPANY	(II) CLOSE CORPO- RATION	(III) PARTNERSHIP	(IV) JOINT VENTURE	(V) SOLE PROPRIE- TOR

(I) Certificate For Company

I,, chairperson of the Board of Directors of, hereby confirm that by resolution of the Board (copy attached) taken on, Mr/Ms, acting in the capacity of, was authorized to sign all documents in connection with the tender for Contract No. JW14335 and any contract resulting from it on behalf of the company.

Chairman:

As Witnesses: 1.....

2.....

Date:



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Contract No JW14335
Supply and Installation of STS Prepayment Water Meters in
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(II) Certificate For Close Corporation

We, the undersigned, being the key members in the business trading as
..... hereby authorize Mr/Ms , acting in the capacity of
....., to sign all documents in connection with the
tender and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key members upon whom rests the direction of the affairs of the Close Corporation as a whole.

(III) Certificate For Partnership

We, the undersigned, being the key partners in the business trading as,

....., hereby authorize Mr/Ms,

acting in the capacity of, to sign all documents in connection

with the tender and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.

(IV) Certificate For Joint Venture

This Returnable Schedule is to be completed by joint ventures.

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

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner		Signature. Name Designation
		Signature. Name Designation
		Signature. Name Designation
		Signature. Name Designation

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Joint Venture as a whole.



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(V) Certificate For Sole Proprietor

I,, hereby confirm that I am the sole owner of the Business
trading as

Signature of Sole owner:

As Witnesses:

1.....

2.

Date:

T2.1.3 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: 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 5: Particulars of companies and close corporations

Company registration number

.

Close corporation number

Proof of CSD registration ie MA xxxxxxxxx number.

SARS Tax Compliance status Pin number

Section 6: Record in the service of the state

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

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

If any of the above boxes are marked, disclose the following:

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

Volume 1 Tender and Contract
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*insert separate page if necessary			
<p>Section 7: Record of spouses, children and parents in the service of the state</p> <p>Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months been in the service of any of the following:</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> a member of any municipal council <input type="checkbox"/> a member of any provincial legislature <input type="checkbox"/> a member of the National Assembly or the National Council of Province <input type="checkbox"/> a member of the board of directors of any municipal entity <input type="checkbox"/> an official of any municipality or municipal entity </div> <div style="width: 50%;"> <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity <input type="checkbox"/> an employee of Parliament or a provincial legislature </div> </div>			
Name of spouse, child or parent	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

*insert separate page if necessary

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

- authorizes the Employer to verify the tax compliance status from the South African Revenue Services that my / our tax matters are in order;
- confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- 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

RD.12

Returnable Documents

T2.1.4 Preferential Procurement

Forms for Completion by the Tenderer included in this section are:

Form No.	Form Title	Description	Page
	Special Conditions	Sub-contracting and Skills Transfer	RD.14
MBD 6.1	Empowerment and Preferential Procurement	Procedures and adjudication criteria for the information of the Tenderer	RD.20
MBD 4	Declaration of any potential Conflict of Interest	Form to be completed by the Tenderer	RD. Error! Bookmark not defined.
MBD 8	Declaration of bidder's past supply chain management practices	Form to be completed by the Tenderer	RD.31
MBD 5	Declaration for Procurement above R10 Million (VAT Included)	Form to be completed by the Tenderer	RD.33
MBD 9	Certificate of Independent Bid Determination	Form to be completed by the Tenderer	RD.34

Note:

All information supplied must be current and valid. Proposed or imminent changes to a Tenderer's status may be mentioned but the declarations must reflect current circumstances.

JW 6.1 (a) SPECIAL CONDITIONS

<u>GENERAL</u>	NB	The attention of the tenderer is drawn to the fact that General Conditions of Contract (JW13) shall apply, where applicable, to this contract.
<u>1. DEFINITIONS:</u>	1.1	That “Johannesburg Water (SOC) Ltd” shall herein after be referred to as “JW”.
	1.2	The “Managing Director” shall mean the Managing Director: Johannesburg Water (SOC) Ltd or his authorised representative.
	1.3	“Vat” shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended.
<u>2. PRICE:</u>	2.1	All prices shall exclude Value Added Tax (VAT) at the standard rate as gazetted from time to time by the Minister of Finance in terms of the Value Added Tax Act 89 of 1991 as amended.
	2.2	All price(s) tendered shall include the cost of all insurances, services, labour, equipment, materials, etc. and be the net price after all discounts and settlement discount have been deducted. The net price/s shall be without any extra or additional charges to JW whatsoever.
	2.3	This is a non-firm contract, and any price adjustment shall be dealt with as stipulated in the Contract Data.
<u>3. COMPLIANCE WITH LEGISLATION AND SPECIFICATION:</u>	3.1	The Contractor shall comply with all Municipal By-laws, and any other Laws, Regulations or Ordinances and shall give all notices and pay all fees required by the provisions of such By-laws and Regulations specified therein.
	3.2	The Contractor shall comply with all the requirements prescribed in the specification.
	3.3	The Contractor must ensure that all legal requirements for their items offered are adhered to for the duration of the contract.
	3.4	In the event there are non-compliant water meters supplied, the contractor shall be liable for any customer billing and other related financial losses incurred.
<u>4. SAFETY:</u>	4.1	Without derogation from the generality of Clause 3.1, or from any other provision of this contract, the Contractor shall at all times during the contract, comply in all respects with the safety and other requirements of the Occupational Health and Safety Act 85 of 1993 and the regulations applicable hereunder.
<u>5. EMPLOYMENT OF LABOUR:</u>	5.1	The Contractor must ensure that all relevant legislation is complied with in the employment of labour.

**6.SUBCON-
TRACTING**

- 6.1 The Contractor shall be required to sub-contract a minimum of 30% of the construction amount to local SMMEs to undertake portions of the Works in accordance with the provisions of the Contract to SMMEs.

**7. INSURANCE
AND INDEMNIFI-
CATION:**

- 7.1 In addition to any insurance required to be held by the Contractor in terms of the Occupational Injuries and Diseases Act no. 130 of 1993, the Contractor must be fully insured against all accidents, loss or damage arising out of the conditions or operation of the vehicles or execution of any work including all third party risks. The Contractor hereby indemnifies and agrees to keep indemnified throughout the period of the contract JW against all claims by third parties or the Contractor's own employees resulting from the operations carried out by the Contractor under this contract.
- 7.2 A current certificate of good standing in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 must be furnished by the Contractor within 21 days of notification of acceptance of the tender.
- 7.3 The Contractor shall be liable for any damages or injury of whatever nature caused directly or indirectly as a result of his operations, to any of JW's or Municipal Government or Private Property or to his own vehicles and personnel.
- 7.4 Copies of such insurances and indemnifications must be supplied to JW within 21 days of notification of acceptance of the tender.
- 7.5 Upon award, the appointed service provider will be required to submit proof of insurance.

**8. REMEDIES,
BREACH, WHOLE
AGREEMENT,
WAIVER, VARIA-
TION AND INDUL-
GENCES:**

- 8.1 If the Contractor or any person employed or associated with him or in the case of a Company, a Director or shareholder or person also associated with such Company, either directly or indirectly gives or offers to give any gratuity, reward or commission or other bribe to any person in the employ of JW this contract shall be avoidable at the instance of JW.
- 8.2 If the Contractor has not complied with the Managing Director's requirements or if he is in breach of any of the Conditions of this contract and:
- 8.2.1 fails to remedy such breach within 14 (fourteen) days of receipt of written notice requiring it to do so (or if not reasonably possible to remedy the breach within 14 (fourteen) days), within such further period as may be reasonable in the circumstances, provided that the Contractor furnishes evidence within the period of 14 (fourteen) days reasonably satisfactory to JW, that it has taken whatever steps are available to it to commence remedying the breach), then the JW shall be entitled, without notice and in addition to any other remedy available to it at law or under this agreement, including obtaining an interdict, to cancel this agreement or to claim spe-

cific performance of any obligation whether or not the due date for performance has arrived, in either event without prejudice to JW's right to claim damages.

8.2.2 Should JW elect to cancel the contract then and in such instance a certificate presented by the Managing Director of JW shall constitute proof of the contractor's indebtedness to JW.

8.3 This agreement constitutes the entire agreement between the parties relating to the matter hereof.

8.4 No amendment or consensual cancellation of this agreement or any provision or term hereof or of any agreement, bill of exchange or other document issued or executed pursuant to or in terms of this agreement and no settlement of any dispute arising under this agreement and no extension of the time, waiver or relaxation or suspension of any of the provisions or terms of this agreement or of any agreement, bill of exchange or other document issued pursuant to or in terms of this agreement shall be binding unless recorded in a written document signed by the parties. Any such extension, waiver or relaxation or suspension, which is so given or made, shall be strictly construed as relating to the matter in respect whereof it was made or given.

9. DISPUTES:

9.1 In the event of any dispute arising between JW and the Contractor in connection with or arising out of the contract, it shall be referred to the Managing Director of JW who shall state his decision in writing and give notice of the same to the Contractor within 28 days of the dispute having been submitted to the Managing Director of JW. Such decision shall be binding upon the Contractor subject to clause 9.2.

9.2 Should the Contractor be dissatisfied with the decision of the Managing Director he/she may, within 28 days after receiving notice of such decision, require that the issue or issues be referred to a single arbitrator to be agreed upon between the parties or, failing agreement, to be nominated by the Chairman of the Association of Arbitrators and any such reference shall be deemed to be submission to the arbitration of a single arbitrator in terms of the Arbitration Act, 1965. The award of the arbitrator shall be final and binding on both parties.

9.3 Not later than one week after receipt of notice calling for arbitration, JW may give notice to the Contractor that the dispute or disputes be settled by Court of Law having jurisdiction.

10. SCOPE OF CONTRACT:

10.1 The Contractor shall be required to carry out the Works as per the standards and specifications as outlined in the Scope of Works.

11. DURATION:

11.1 The duration of the contract shall be for a period of 18 months.

.11.2 Qualification and registration number of professional bodies is required.

<u>12. QUANTITIES:</u>	12.1	All quantities on the Bill of Quantities (BoQ) are based on estimates and they shall not be exceeded without prior written approval of the engineer/employer.
<u>13. PRICING:</u>	13.1	Tendered rates for the METER INSTALLATION SCHEDULE is to be reviewed/verified by JW for price competitiveness with the market. Tendered rates exceeding 20% of the market related margin may result JW imposing a fee based on the market analysis.
<u>14. GUARANTEE</u>	14.1	The Maintenance period for the meter is 12 months (12months Guarantee). Effective from the date of switching of the meter from open mode to prepaid mode on Customers property.
	14.2	Minimum battery life for the meter must be 5 years, effective from date of approval of the meter batch by JW's Flow Lab;
<u>15. REQUIREMENTS:</u>	15.1	All water meters shall comply with SANS 1529 (1 and 9).
<u>16. TENDER VALIDITY:</u>	16.1	The Tender shall be valid for a period of ninety (90) days from the date of closing of Tenders.
<u>17. ADJUDICATION OF TENDERS:</u>	17.1	The highest, lowest or any tender will not necessarily be accepted by JW. JW reserves the right to adjudicate the Tender to JW's best interest.
<u>18. ACCEPTANCE OF TENDER:</u>	18.1	A valid and binding contract shall be concluded at the time that the contractor signs an official Contract Document at the offices of JW after the contractor is in possession of the letter of acceptance.
<u>19. COMPLETENESS:</u>	19.1	Failure by the tenderer to complete in full the attached JW 4-Pricing Schedule will render the tender liable to rejection on the grounds of being incomplete.
<u>20. ADDITIONAL INFORMATION:</u>	20.1	Any additional information may be obtained from; Roginal Musonda at (011) 688 6540 or roiginal.musonda@jwater.co.za.
<u>21. NOTICE</u>	21.1	Any notice or communication required or permitted to be given in terms of this agreement shall be valid and effective only if in writing and may be given in one or more of the following manners:-
	21.2	Sent by prepaid registered post (by airmail if appropriate) in an envelope correctly addressed to it at an address chosen as its <i>domicilium citandi et executandi</i> to which post it is delivered, in which event such notice shall be deemed to have

been received on the 7th (seventh) business day after posting (unless the contrary is proved); or

- 21.3 Delivered by hand to a responsible person during ordinary business hours at the physical address chosen as its *domicilium citandi et executandi*, in which event such notice shall be deemed to have been received on the day of delivery; or
- 21.4 Sent by email to its chosen telefax number stipulated in MBD 1, in which event such notice shall be deemed to have been received on the date of dispatch (unless the contrary is proved).

JW 6.1 (b) Special conditions of subcontract

The successful Tenderer must therefore subcontract a minimum of 30% of the value of this contract to an entity(s) described below. The subcontractor/s chosen for this purpose must be registered on National Treasury's Central Supplier Database (CSD) and must be from one of the following designated groups.

- An EME or QSE which is at least 51% black owned by black people;
 - An EME or QSE which is at least 51% owned by black people who are youth;
 - An EME or QSE which is at least 51% owned by people who are women;
 - an EME or QSE which is at least 51% owned by black people with disabilities;
 - an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
 - a cooperative which is at least 51% owned by black people;
 - an EME or QSE which is at least 51% owned by black people who are military veteran;
 - an EME or QSE.
1. Subcontractors must be chosen from National Treasury's Central Supplier Database which can be accessed on National Treasury's website.
 2. A subcontracting agreement between main contractor and the subcontractor shall be submitted to JW upon appointment and must include minimum information below.
 - Name of sub-contractor and specific goals
 - Area and location of project
 - Scope of work issued to the sub-contractor
 - Value of the work issued including P&G's (auditable)
 - Assistance provided to the sub-contractor e.g. acquisition of materials, machinery and tools

-
- Skills transfer plan
3. The successful contractor must submit periodic SMME reports to the Project Manager as follows:
- Name of sub-contractor and specific goals
 - Area and location of project
 - Scope of work issued to the sub-contractor
 - Value of the work issued (auditable)
 - Monthly payments made to the subcontractor (auditable)
 - Assistance provided to the sub-contractor e.g. acquisition of materials, machinery and tools
 - Performance of the sub-contractor
4. Upon completion of the project, the contractor is required to provide a final report to JW on skills acquired, description and value of work performed as well as their overall performance.

(The above information will assist the sub-contractor to improve their CIDB grading)

Skills transfer

It is an absolute requirement that the successful tenderer empowers the appointed sub-contractor/s through the transfer of skills. In this regard a skills transfer plan must be submitted prior to commencement of each work package.

I / we representing the tenderer hereunder agree to the above conditions.

Name of Tenderer: _____

Authorised signatory: _____ **Date:** _____

Tenderers who **FAIL** to complete and sign schedule JW6.1 will not be evaluated further

MBD 6.1

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 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

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

- a) The applicable preference point system for this tender is the 90/10 preference point system.
- b) The lowest acceptable tender will be used to determine the accurate system once tenders are received.

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 90/10 PREFERENCE POINT SYSTEMS

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

90/10

Type equation here. $Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

4. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND IN-COME GENERATING PROCUREMENT

4.1 POINTS AWARDED FOR PRICE

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

90/10

$$Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

5. POINTS AWARDED FOR SPECIFIC GOALS

- 5.1 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:

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system)	Number of points claimed (90/10 system) (To be completed by the tenderer)
Business located within the boundaries of COJ Municipality	7	
Business owned by 51% or more-Women	3	
Total	10	

5. DECLARATION WITH REGARD TO COMPANY/FIRM

5.1 Name _____ of _____ company/firm.....

5.2 Company _____ registration _____ number: _____

5.3 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]

5.4 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.

<p>.....</p> <p>SIGNATURE(S) OF TENDERER(S)</p>	
SURNAME AND NAME:
DATE:
ADDRESS:

6. SUB-CONTRACTING

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

(***Tick applicable box***)

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

6.1.1 If yes, indicate:

i) What percentage of the contract will be subcontracted _____ (minimum of 11%)

ii) The name of the sub-contractor(s):

.....

.....

.....

.....

iii) The black sharehold of the sub-contractor(s):

.....

.....

.....

.....

iv) Whether the sub-contractor(s) is an EME or QSE

(***Tick applicable box***)

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

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2022:

7. DECLARATION WITH REGARD TO COMPANY/FIRM

7.1 Name of company/firm:

7.2 VAT number registration number:

7.3 Company registration number:

7.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

7.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

.....

7.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
 - ☐ Supplier
 - ☐ Professional service provider
 - ☐ Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

7.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:

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

7.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the Specific Goals in MBD 6.1 qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- v) The information furnished is true and correct;
- vi) In the event of a contract being awarded as a result of points claimed as shown in MBD 6.1, the contractor is required to furnish documentary proof as requested in the Tender Data to the satisfaction of the purchaser that the claims are correct;
- vii) If the specific goals points have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (f) disqualify the person from the bidding process;
 - (g) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (h) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due

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to such cancellation;

- (i) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
- (j) forward the matter for criminal prosecution.

WITNESSES

1.

2.

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

DATE:

ADDRESS

.....
.....

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.
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 or her representative:.....

3.2 Identity Number.....

3.3 Position occupied in the Company (director, trustee, hareholder²):.....

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? **YES / NO**

3.8.1 If yes, furnish particulars.

.....

¹MSCM 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.

3.9 Have you been in the service of the state for the past twelve months?YES / NO



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- 3.9.1 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
- 3.10.1 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
- 3.11.1 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
- 3.12.1 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
- 3.13.1 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
- 3.14.1 If yes, furnish particulars:.....
.....



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

Full Name	Identity Number	State Employee Number

.....
Signature

.....
Date

.....
Capacity

.....
Name of Bidder

MBD 8
DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 The bid of any bidder may be disregarded if that bidder, or any of its directors have-
 - a. abused the institution's supply chain management system;
 - b. committed fraud or any other improper conduct in relation to such system; or
 - c. failed to perform on any previous contract.

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? To access this Register, enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		



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CERTIFICATION

I, THE UNDERSIGNED (FULL NAME).....

**CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION
FORM IS 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.**

.....

Signature

.....

Date

.....

Position

.....

Name of Bidder



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MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

For all procurement expected to exceed R10 million (VAT included), bidders must complete the following questionnaire:

- 1 Are you by law required to prepare annual financial statements for auditing?

YES / NO

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

.....
.....

2. If the bidder is not required by law to prepare annual financial statements for auditing, they shall be required to furnish their Annual Financial Statements -

- i. for the past three years , or
ii. since their establishment if established during the past three years

Do you have any outstanding undisputed commitments for municipal services towards a municipality or any other service provider in respect of which payment is overdue for more than 30 days?

YES / NO

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

.....
.....

- 3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

YES / NO

3.1 If yes, furnish particulars

.....
.....

- 4 Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

YES / NO

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

.....

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE

FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging)². Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
3. Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
5. In order to give effect to the above, the attached Certificate of Bid Determination (MBD9) must be completed and submitted with the bid:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices 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.

MBD 9 CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description) in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity) do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of _____ that:
(Name of Bidder)

1. I have read, and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;

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



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-
- (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
(f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

T2.1.5 Proposed Amendments and Qualifications

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

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

Page	Clause or item	Proposal

Signed _____ Date _____

Name _____ Position _____

Tenderer _____



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T2.1.6 Schedule of the Tenderer's Experience

[illegible]

Signed _____ Date _____

Name	Position
------	----------

<i>Tenderer</i>	
-----------------	--



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Contactable Reference Template

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water relative to tender Contract No. **JW14335 for Supply and Installation of STS Prepayment Water Meters in Cosmo City – Phase 2**

Name of Tenderer:

Description of Goods / Services provided

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

Contract Value:

Duration: Year-Month-Day when the Goods / Services were provided

Start date (Year- Month -Day) when the above was provided:

...../...../.....

End date (Year- Month -Day) when the above was provided:

...../...../.....

Name of authorised person:

.....

Signature:..... **Date**

Telephone/Mobile:

.....

Email:

.....

Completed on behalf (Name of Client)

.....

NB: This document must be completed by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements. A separate form must be completed for each reference as required in the evaluation criteria. Information provided will be verified and if found to be false or misrepresented, punitive measures will be instituted against the respective party including blacklisting and restriction from participating in any future government tender.



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Contactable Reference Template

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water relative to tender Contract No. **JW14335 for Supply and Installation of STS Prepayment Water Meters in Cosmo City – Phase 2**

Name of Tenderer:

Description of Goods / Services provided

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

Contract Value:

Duration: Year-Month-Day when the Goods / Services were provided

Start date (Year- Month -Day) when the above was provided:

...../...../.....

End date (Year- Month -Day) when the above was provided:

...../...../.....

Name of authorised person:

.....

Signature:..... **Date**

Telephone/Mobile:

.....

Email:

.....

Completed on behalf (Name of Client)

.....

NB: This document must be completed by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements. A separate form must be completed for each reference as required in the evaluation criteria. Information provided will be verified and if found to be false or misrepresented, punitive measures will be instituted against the respective party including blacklisting and restriction from participating in any future government tender.

T2.1.8 Schedule of Key Personnel

In terms of the Project Specification and the Conditions of Tender, unskilled workers may only be brought in from outside the local community if such personnel are not available locally.

The Tenderer shall list below the personnel which they intend to utilize on the Works, including key personnel which may have to be brought in from outside if not available locally.

CATEGORY OF EMPLOYEE	NUMBER OF PERSONS					
	KEY PERSONNEL, PART OF THE CONTRACTOR'S ORGANISATION		KEY PERSONNEL TO BE IMPORTED IF NOT AVAILABLE LOCALLY		UNSKILLED PERSONNEL TO BE RECRUITED FROM LOCAL COMMUNITY	
	HDI	NON-HDI	HDI	NON-HDI	HDI	NON-HDI
Contracts Manager						
Site Agent,						
Safety Officer						
Others:						

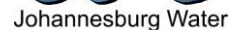
SIGNATURE:.....

DATE:

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



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Provide separate forms for each position listed in Form: Key Personnel

[illegible]

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....
Date



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[illegible]

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....
Date



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T2.2 LIST OF RETURNABLE DOCUMENTS

<u>Document</u>	<u>Page</u>
2. Other documents required only for tender evaluation purposes	
T2.2.1 Certificate of Contractor Registration issued by the Construction Industry Development Board	RD.47
T2.2.2 SARS Tax Compliance Status Pin and Proof of CSD registration i.e. MA xxxxxxxxxx number	RD.48

T2.2.1 Contractor's Certificate of Registration With CIDB

NB: The Tenderer shall attach hereto the Contractor's Certificate of Registration with CIDB OR provide the CIDB registration number that JW can use to verify CIDB requirements for this tender. Failure to submit the certificate or CIDB registration number with the tender document will lead to the conclusion that the Tenderer is not registered with the CIDB and therefore not eligible to tender.

Tenderers who have made application to CIDB for registration and are capable of being so registered prior to the evaluation of submissions must attach a notification from CIDB that their application is being considered.

CIDB status to be active at the required CIDB grading at time of evaluation to avoid disqualification.

SIGNATURE:.....

DATE:

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

T2.2.2 SARS Tax Compliance Status Pin and Proof of CSD registration

The Tenderer must attach hereto a copy SARS Tax Compliance Status Pin and Proof of CSD registration i.e. MA xxxxxxxxxxx number.

SIGNATURE:.....

DATE:

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



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T2.3 LIST OF RETURNABLE SCHEDULES

Document

Page

3. Returnable Schedules that will be incorporated into the contract

T2.3.1	Imported content sheet: forward exchange cover for imported goods	RD.50
--------	---	-------

T2.3.1 Imported Content Sheet: Forward Exchange Cover for Imported Goods

The Tenderer shall, in the attached schedule, for each item which a price is tendered, state the item number as it appears in the Schedule of Quantities, a brief description of the item, the country of origin, the value of the imported content of all goods comprising that item, the number of items for which he requires forward exchange cover, and the total amount for which forward exchange cover will be required.

Each Part of the Schedule of Quantities must be dealt with separately.

In the event of components being imported from more than one country, a separate entry shall be made for each country.

The Tenderer shall state the applicable rate(s) for the relevant country(ies) as at the date seven days prior to the closing date for the receipt of tenders.

Exchange rate(s) as at (insert date)

Country	Exchange Rate

SIGNED ON BEHALF OF TENDERER :

NAME (in print) :

DATE :

T2.4 LIST OF RETURNABLE SCHEDULES

<u>Document</u>	<u>Page</u>
4. Other documents that will be incorporated into the contract	
T2.4.1 JW 6.4 Returnable Annexure A – SHE Acknowledgment form	RD. 53
T2.4.2 JW 6.5 Returnable Annexure B: Acknowledgement of Tender Drawings	RD. 54

T2.4.1 Returnable Annexure A: Acknowledgement of SHE Specification & Annexures

DECLARATION BY CONTRACTOR

I, the undersigned, and representing the tenderer as indicated hereby acknowledge that I have obtained copies of the following listed documentation and confirm that I fully understand the contents thereof and confirm compliance thereto in the event of being successful:

- OHS Specification (Volume 2)
- Annexure 1: Baseline Risk Assessment
- Annexure 2: Medical Screening Policy
- Annexure 3: Sign off form
- Annexure 4: Environmental Management Plan

We furthermore commit to:

- Comply with all applicable SHE related legal and other requirements.
- Inform all staff of their role in managing environmental impacts and safety hazards on site.

Signed at on this Day of 20.....

Name of tenderer	
Name of Authorized person	
Authorized Signature*	

T2.4.2 Returnable Annexure B: Acknowledgement of Tender Drawings

DECLARATION BY CONTRACTOR

I, the undersigned, and representing the tenderer as indicated hereby acknowledge that I have obtained copies of the following listed documentation and confirm that I fully understand the contents thereof and confirm compliance thereto in the event of being successful:

The drawings that are issued for **TENDER PURPOSES** are those noted below:

LIST OF DRAWINGS	
DRAWING NUMBER	DESCRIPTION OF DRAWINGS
JW14335/GP/100	GENERAL LAYOUT DRAWING
JW14335/EXT.1/101.1	GENERAL LAYOUT-COSMO CITY EXT 1
JW14335/EXT.1/101.2	GENERAL LAYOUT-COSMO CITY EXT 1
JW14335/EXT.2/102	GENERAL LAYOUT-COSMO CITY EXT 2
JW14335/EXT.4/103	GENERAL LAYOUT-COSMO CITY EXT 4
JW14335/EXT.6/104	GENERAL LAYOUT-COSMO CITY EXT 6
JW14335/EXT.11/105	GENERAL LAYOUT-COSMO CITY EXT 11
JW14335/EXT.15/106	GENERAL LAYOUT-COSMO CITY EXT 15
JW14335/EXT.20/107	GENERAL LAYOUT-COSMO CITY EXT 20
JW14335/EXT.21/108	GENERAL LAYOUT-COSMO CITY EXT 21
JW14335/EXT.22/109	GENERAL LAYOUT-COSMO CITY EXT 22
JW100-DET05-W01	WATER ERF CONNECTIONS
JW100-DET10-W01	NAME BOARD

Signed at on this Day of 20.....

Name of tenderer	
Name of Authorized person	
Authorized Signature*	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



Johannesburg Water SOC Ltd



VOLUME 1

PART 1: AGREEMENT AND CONTRACT DATA

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



1	TABLE OF CONTENTS	PAGE (S)
2	C1.1FORM OF OFFER (ACCEPTANCE & AGREEMENT).....	3
3	C1.1.1 Form of Offer.....	3
4	C1.1.2 Form of Acceptance.....	4
5	C1.1.3 Schedule of Deviations	5
6	C1.2 CONTRACT DATA	7
7	C1.2.1 Part 1: Data provided by the Employer.....	7
8	C1.2.2 Part 2: data provided by the Contractor.....	18
9		

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



C1.1 FORM OF OFFER (ACCEPTANCE & AGREEMENT)

C1.1.1 FORM OF OFFER

The contractor is to complete and sign the form of offer

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

JW14335: SUPPLY AND INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

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

By the representative of the Contractor, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Contractor 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 RATES TO PROVIDE THE WORKS TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS

_____ Rand (in words); R _____ (in figures),

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 Contractor before the end of the period of validity stated in the Tender Data, whereupon the Contractor becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the
Contractor**

(Name and address of organisation)

**Name and
signature of
witness**

Date

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



C1.1.2 FORM OF ACCEPTANCE

THE EMPLOYER IS TO COMPLETE AND SIGN THE FORM OF ACCEPTANCE

By signing this part of the Form of Offer and Acceptance, the Employer identified below accepts the Contractor'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 Contractor's Offer shall form an agreement between the Employer and the Contractor 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 1 Agreement and Contract Data, (which includes this Agreement)
- Part 2 Pricing Data
- Part 3 Scope of Work
- Part 4 Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 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 Contractor and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Contractor shall within twenty-eight **(28) days** after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the employer's agent (whose details are given in the Contact Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date of this Agreement comes into effect. 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 Contractor receives one fully completed copy of this document, including the Schedule of Deviations (if any). Unless the Contractor (now the Contractor) within five days after 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 binding contract between the parties,

FOR EMPLOYER OFFICIAL USE ONLY

Name(s)

Capacity

For the Employer

Johannesburg Water SOC Ltd, Turbine Hall, 65 Ntemi Piliso, Newtown, Johannesburg

(Name and address of organisation)

Name and signature

Date

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



Supply and Installation of STS Prepayment
Water Meters in Cosmo City – Phase 2
Part 1 Agreement and Contract Data

of witness

C1.1.3 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 Contractor'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; and
4. Any change or addition to the tender documents arising from the above arrangements and recorded here shall also be incorporated into the final draft of the Contract.

1 Subject

Details

2 Subject

Details

3 Subject

Details

4 Subject

Details

5 Subject

Details

6 Subject

Details

7 Subject

Details

8 Subject

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



Supply and Installation of STS Prepayment
Water Meters in Cosmo City – Phase 2
Part 1 Agreement and Contract Data

Details _____

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

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

For the Contractor:
Signature(s)

Name(s)

Capacity

(Name and address of organisation)

**Name and
signature of
witness**

Date

For the Employer:
Signature(s)

Name(s)

Capacity

Johannesburg Water SOC Ltd, Turbine Hall, 65 Ntemi Piliso, Newtown, Johannesburg

(Name and address of organisation)

**Name and
signature of
witness**

Date

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



C1.2 CONTRACT DATA

C1.2.1 Part 1: Data provided by the Employer

CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works (2015), published by the South African Institution of Civil Engineering, is applicable to this Contract.

C1.2.1.1 Contract Specific Data

The following contract specific data are applicable to this Contract:

GCC Clause	Information
1.1.1.13	The Defects Liability Period is 52 weeks from the date of the Certificate of Completion.
1.1.1.14	The contract duration is 18 months.
1.1.1.15	The name of the Employer is Johannesburg Water (SOC) Limited Contact person is: Mr Roginal Musonda
1.2.1.	The address of the Employer is: Physical Postal Tel: 011 688 6540 Turbine Hall P.O. Box 61542 Fax: 011 688 1521 65 Ntemi Piliso Street Marshalltown Email:roginal.musonda@jwater.co.za Newtown 2107
1.1.1.16	The name of the Employer's Agent is Mr. Chris Mphahle
1.2.1.2	The address of the Employer's Agent is: Physical Postal Tel: 011 688 6540 Turbine Hall P.O. Box 61542 Fax: 011 688 1521 65 Ntemi Piliso Street Marshalltown Email: Newtown 2107 roginal.musonda@jwater.co.za
5.3.1	The documentation required before commencement with Works execution are: <ul style="list-style-type: none"> • Approved Health and Safety File (Clause 4.3) • Approval of the Environmental File • Initial programme (Clause 5.6) • Guarantee from Bank or Insurance Company (Clause 6.2) • Insurance of Construction Machinery Plant (Clause 8.6) • Insurance of Motor Vehicle Liability (Clause 8.6) • Commissioner of COID (Clause 8.6) • Signed Notification to the Department of Labour • Construction Permit were applicable
5.3.2	The Contractor shall deliver his programme of work 28 days before the Commencement Date.
5.3.3	Time to instruct commencement of the Works Delete Clause 5.3.3 and replace with the following: The Contractor shall commence with carrying out the Works upon written instruction from the Employer's Agent to commence with the Works.

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



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GCC Clause	Information
5.8	The special non-working days are All Public Holidays in terms of the Public Holidays Act as amended. Working days shall be Monday to Friday, between 07h00 to 17h00.
5.8.1	The year-end break "builder's break" commences on 16 December until the first working Monday of January of the succeeding year as defined by the SAFCEC on annual basis.
5.13.1	The penalty for failing to complete the Works is the greater of: An amount equal to daily Time Related P&G rate (as calculated from the Time Related P&G section in the Bill of Quantities) or R4 000.00 per day, whichever is greater.
5.16.3	The latent defects period is 10 years.
6.2	The time to deliver the Form of Guarantee is within 28 days from the Commencement Date.
6.2.1	The liability of the guarantee shall be 10% of the tendered sum
6.8.2	The contract rates shall be fixed for the first 12 months and thereafter the rates will be adjusted by the change in CPA (as published by Statistics SA and will be fixed for the next 12 months
6.8.3	Price adjustments for variations in the costs of special materials are NOT allowed.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	No retention money will be required under this contract
6.10.4	Delivery, dissatisfaction with and payment of payment certificates Delete Clause 6.10.4 and replace with the following: Payment shall be made upon: <ul style="list-style-type: none"> • The Contractor providing a payment certificate with all required supporting documents to the Employer's Agent on dates to be communicated to the Contractor upon award. • The payment certificate being submitted with an original tax invoice. • A statement being submitted on the last day of the month. Payment will be made within 30 days of receipt of the supplier's statement.
6.10.5	Payment of Retention Money Add to Clause 6.10.5 the following: Payment will be subject to Johannesburg Water processes as outlined on clause 6.10.4 as amended.
6.10.6	A Retention Money Guarantee is not permitted
6.11	Delete Clause 6.11.
8.4.1.1	Add to the end of Clause 8.4.1.1 the following text: "hereby indemnifies the Employer against any liability in respect of damage or physical loss of property of any person or injury or death of any person due to non-compliance with the Occupational Health and Safety Act (Act 85 of 1993).
8.6	Delete Clause 8.6.1 and replace it with the following: Notwithstanding anything elsewhere contained in the Contract and without limiting the obligations, liabilities or responsibilities of the Contractor in any way whatsoever (including but not limited to any requirement for the provision by the Contractor of any

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



GCC Clause	Information		
	other insurances) the Employer shall effect and maintain as appropriate in the joint names of the Employer and the Contractor and where relevant Sub-Contractors the following insurances which are subject to the terms, limits, exceptions and conditions of the Policy :		
8.6.1.1	Contract Works Insurance – which will provide cover against accidental and Physical loss of or damage to the Works, Temporary Works and Materials intended for incorporation in the Works from whatsoever cause arising other than causes set out in Clause 8.3.1 for which the Contractor is responsible for the Works in terms of Clause 8.2.1, and for a sum insured which shall, unless otherwise specified in the Contract, be the aggregate of :		
8.6.1.1.1	The Contract Price,		
8.6.1.1.2	a sum to cover the value (specified at the time of delivery to the Contractor) of materials supplied by the Employer for incorporation in the Works and not included in the Contract Price, and		
8.6.1.1.3	a sum to cover professional fees, not included in the Contract Price, payable in respect of the repair or reinstatement of damage to the Works.		
8.6.1.2	Delete clause 8.6.1.2 and replace with the following: Following the introduction of legislation affecting the articles of the South African Special Risks Insurance Association (SASRIA) , insurance cover for loss or damage to the Works caused by any event defined as a risk in terms of the insurance offered by SASRIA, will be provided under a certificate issued by SASRIA.		
8.6.1.3	Delete clause 8.6.1.3 and replace with the following: Public Liability Insurance which will provide indemnity against legal liability in the event of accidental death of or injury to third party persons and/or loss or damage to third party property arising directly from the execution of the Contract and occurring during the period of Insurance with a limit of indemnity of R5million in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause.		
8.6.1.6	Add the following clause to 8.6.1 Full details of the Contract Works and Public Liability insurances effected by the Employer may be obtained from the Employer and the Contractor/Sub-Contractors are deemed to be aware of the terms, exclusions and conditions of these insurances.		
8.6.1.7	Add the following clause to 8.6.1 The Employer shall pay the premium in connection with the insurances effected by the Employer in 8.6.1.1, 8.6.1.2 and 8.6.1.3 above.		
8.6.2	Delete clause 8.6.2 and replace with the following: The Employer/Contractor/Sub-Contractors and/or any other party who obtains indemnity under the policies effected under 8.6.1.1, 8.6.1.2 and 8.6.1.3 above shall become liable for the deductibles (first amount payable) which are applicable in respect of each and every occurrence or series of occurrences attributable to one source or cause giving rise to loss or damage or indemnifiable liability.		
8.6.3	Delete clause 8.6.3 and replace with the following: In the event of an occurrence which is likely to give rise to a claim under the insurance effected by the Employer, the following procedure shall be adhered to:		
8.6.3.1	Add the following clause to 8.6.3		
Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



GCC Clause	Information
	In addition to any statutory requirements and/or other requirements contained in the Conditions of Contract, the Contractor shall immediately notify the Employer's Insurance Brokers through the Employer's agent, giving the circumstances, nature and an estimate of the loss or damage.
8.6.3.2	Add the following clause to 8.6.3 The Contractor shall, when required, complete a claims advice form, available from the Employer's Insurance Brokers, to whom the form shall be returned without delay through the Employer's agent. Each claim must be approved by the Employer before submission to the insurance broker.
8.6.3.3	Add the following clause to 8.6.3 The Contractor shall afford all access to the representatives of the Insurers for the purpose of the assessment of any loss or damage.
8.6.3.4	Add the following clause to 8.6.3 Negotiations on the settlement of claims shall be conducted by the Contractor/Sub-Contractor with the Insurers through the Employer's Insurance Brokers via Employer's agent.
8.6.4	Delete clause 8.6.4 and replace with the following: Any amount which becomes payable to the Contractor or any of his Sub-Contractors as a result of claim under the Contract Works Insurance shall if required by the Employer be paid net of the deductible to the Employer who shall pay the Contractor from the proceeds of such payment upon rectification repair or reinstatement of the loss or damage but this provision shall not in any way affect the Contractor's obligations liabilities or responsibilities in terms of the Contract.
8.6.5	Delete clause 8.6.5 and replace with the following: The Contractor shall insure all Constructional Machinery and Plant (including tools, offices and other temporary structures and content) and other items, other than those intended for incorporation into the works, owned, leased or hired brought on to the Site against all risks of physical loss or damage for the period such Plant shall be on the Site to the full value thereof. In respect of Plant brought on to the Site by or on behalf of Sub-Contractors the Contractor shall be deemed to have complied with the provisions of this Sub-Clause by ensuring that such Sub-Contractors have similarly insured such Plant and Machinery. Such insurance shall be effected with an Insurer and in terms approved by the Employer (which approval shall not be unreasonably withheld) and the Contractor shall, when required, submit to the Employer's Insurance Brokers, through the Employer's agent, the policy or policies of insurance and receipts for payment of the current premiums.
8.6.6	Delete clause 8.6.6 and replace with the following: The Contractor and the Sub-Contractors shall effect and maintain at their cost insurance under the provision of the Compensation for Occupational Injuries and Diseases Act (COID), 1993 (Act No. 130 of 1993).
8.6.7	Delete clause 8.6.7 and replace with the following: The Contractor and the Sub-Contractors shall effect and maintain at their own cost motor vehicle liability insurance with at least indemnification for "balance of third party" risks, including passenger liability with a limit of indemnity of not less than R2,5million.

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



Supply and Installation of STS Prepayment
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GCC Clause	Information
8.6.8	Add the following clause to 8.6 The Contractor and the Sub-Contractors shall effect and maintain at their own cost any additional insurance, which they deem necessary to cover damage or loss or injury not insured in terms of the insurance effected by the Employer. Such insurance shall be effected with an Insurer and in terms approved by the Employer (which approval shall not be unreasonably withheld) and the Contractor shall, when required, submit to the Employer's Insurance Brokers through the Employer's agent, the policy or policies of insurance and the receipts for payment of the current premiums. If the Contract entails manufacture and or assembly of the Works or part thereof on a site other than the Contract site, the Contractor must satisfy the Employer that all materials and equipment intended for incorporation into the Works are adequately insured during manufacture and assembly. If the Employer has an insurable interest in such works during manufacture or assembly, such interest shall be recorded by way of endorsement on the policies concerned. The Contractor shall furnish the appropriate insurance policies to the Employer within 21 days from the Commencement Date.
8.6.9	Add the following clause to 8.6 Submission of the Tender will be construed by the Employer as acceptance by the Contractor that he is satisfied with the insurance effected by the Employer supplemented by any additional insurance which he shall specify in the manner provided for in the Schedule of Rates.
8.6.10	Add the following clause to 8.6 The Contractor shall give all notices and observe all conditions and requirements imposed by any and all relevant insurance policies which shall be read as being part of the General Conditions of Contract and which shall be binding on the Contractor.
8.6.11	Add the following clause to 8.6 In addition to any statutory obligations, or other requirements contained in the Conditions of Contract, the Contractor shall report in writing to both the Employer's Agent and the Employer's Insurance Brokers every accident within 48 hours of its occurrence, whether such accident is in respect of damage to persons or property. The report shall contain full details of the accident. The Employer's Agent and/or the Employer's Insurers shall have the right to make all and any enquiries either on the Site or elsewhere as to the cause and results of any such accident and the Contractor shall give the Engineer and/or the Employer's Insurers full facilities for carrying out such enquiries.
8.6.12	Add the following clause to 8.6 Negotiations on the settlement of claims under the insurance effected by the Employer shall be conducted by the Contractor/Sub-Contractor with the Insurers through the Employer's Insurance Brokers via the Employer's Agent.
8.6.13	Add the following clause to 8.6 Any claims against the insurance effected by the Employer shall be subject to the Contractor being responsible for the payment of the amount stated in the Policy as being the Deductible (First Amount Payable) as defined in the Policy.
8.6.14	Add the following clause to 8.6 The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



GCC Clause	Information
	other person in the employ of the Contractor or any Sub-Contractor save and except an accident or injury resulting from any act or default of the Employer, its agents or servants and the Contractor shall be deemed to have indemnified and shall keep indemnified the Employer against all such damages and compensation (save and except as aforesaid) and against all claims, demands, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
8.6.15	Add the following clause to 8.6 The Contractor shall insure in the joint names of the Employer, the Contractor and all Sub-Contractors (whether nominated or otherwise) for an amount of R2million per occurrence against the liability stated in Sub-Clause 8.6.6 with an Insurer approved by the Employer (which approval shall not be unreasonably withheld) and shall continue such insurance during the whole of the time that any persons are employed by him on the Works and shall submit to the Engineer such policy of insurance and the receipt of payment of the current premium. Provided always that in respect of any persons employed by any Sub-Contractor, the Contractor's obligation to insure as aforesaid under this Sub-Clause shall be satisfied if the Sub-Contractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy of insurance but the Contractor shall require such Sub-Contractor to produce to the Employer's Agent such policy and the receipt for payment of the current premium.
8.6.16	Add the following clause to 8.6 If the Contractor shall fail to effect and keep in force the insurances referred to in this Clause or for any other insurance which he may be required to effect in terms of the Contract, then and in any such case the Employer may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer as aforesaid from any monies due or which may become due to the Contractor or recover the same as a debt due from the Contractor.
8.6.17	Add the following clause to 8.6 The Contractor shall ensure that all proposed and appointed Sub-Contractors are fully aware of the contents of Clause 8.6.1
8.6.1.1.2	The value of the materials supplied by the Employer to be included in the insurance sum is nil.
10.4.2	Dispute resolution shall be by arbitration if amicable settlement has failed.
10.5.3	The adjudication board shall consist of one member.
7.8.2	Cost of making good of defects Amend Clause 7.8.2.1 as follows: In the first line, correct the spelling of 'therefore'.

C1.2.1.2 Additions

The additional Conditions of Contract are:

C1.2.1.2.1 Penalties

In addition to GCC clause 5.13, during the Contract Period should the Contractor:

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



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a) Fail to report

- The Employer shall levy a penalty on Contractor, should the latter fail to provide reporting as required in the specification highlighted in the Scope of Work in PS 3.2, PS 6.7 and PS 6.9, with regard to content and frequency, whilst as per the Pricing Data section no payment for work completed shall be processed.
- The penalty value shall be R15,000.00 per report per occasion; and
- If the Contractor fails to complete the latter more than three incidents and should the Employer or his duly authorised representative find that the Contractor is hindering his (the Employer's) deliverables to senior management, he shall reserve the right to:
 - i. perform the Works internally or through another Contractor; and
 - ii. deduct additional costs incurred by the Employer from monies owed to the Contractor or from the Contractor's Guarantee. Additional costs incurred by the Employer shall include all claims from Contract affected parties, claims such as but not be limited to claims from customers, any costs associated with the loss of water, and all costs associated with the procurement of an alternative Contractor.
 - iii. terminate the Contract;

No liability in terms of this clause shall be attached to the Contractor if he can prove to the satisfaction of the Employer that the nature of the failure is due to fire, war, riot, strikes, act of God, lockout, accident or other unforeseen occurrences or circumstances beyond the Contractor's control, provided, however, that in all cases the Contractor has notified the Employer in writing within 24 hours of it first coming to his notice, that delivery shall be delayed or become impossible for the above-mentioned reasons.

b) Fail to pay any labour or SMME

- The Employer shall levy a penalty on Contractor, should the latter fail to provide payment to the any labourer or SMME as required in the specification highlighted in the Scope of Work and specified in the appointment agreements with the Contractor and the labourer or SMME.
- The penalty value shall be R 50,000.00 per report per occasion; and
- If the Contractor fails to complete the latter more than three incidents and should the Employer or his duly authorised representative find that the Contractor is hindering his (the Employer's) deliverables to senior management, he shall reserve the right to:
 - i) perform the Works internally or through another Contractor; and
 - ii) deduct additional costs incurred by the Employer from monies owed to the Contractor or from the Contractor's Guarantee. Additional costs incurred by the Employer shall include all claims from Contract affected parties, claims such as but not be limited to claims from customers, any costs associated with the loss of water, and all costs associated with the procurement of an alternative Contractor.
 - iii) terminate the Contract;

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



Supply and Installation of STS Prepayment
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No liability in terms of this clause shall be attached to the Contractor if he can prove to the satisfaction of the Employer that the nature of the failure is due to fire, war, riot, strikes, act of God, lockout, accident or other unforeseen occurrences or circumstances beyond the Contractor's control, provided, however, that in all cases the Contractor has notified the Employer in writing within 24 hours of it first coming to his notice, that delivery shall be delayed or become impossible for the above-mentioned reasons

c) Penalties irreversible

If the Contractor fails to achieve the monetary value of the target set by the Employer for contract participation by local SMME Contractors in terms of for Procurement and Particular Specifications in Scope of Works clause PS3.2.3, the Contractor shall be liable to the Employer for a sum calculated in accordance with the Contract Data and the aforementioned Scope of Works as a penalty for such underachievement."

The penalty for failing to achieve the monetary value of the target set by the Employer for contract participation by Targeted Enterprises and local SMME Contractors in terms of Small Contractor Development of Particular Specifications in PS3: Scope of Works, is 50% of the monetary value by which the achieved monetary value falls short of the target monetary value.

d) Penalties irreversible

The Contractor shall note that all penalties once imposed shall be non-recoverable or reversible, even if the default is remedied.

C1.2.1.2.2 Source of instructions

The Contractor shall neither seek nor accept instructions from any authority external to the Employer's Agent in connection with the performance of his services under this Contract. The Contractor shall refrain from any action which may adversely affect the Employer and shall fulfill his commitments with fullest regard for the interest of the Employer. The Contractor may only take and comply with Employers Health and Safety representative or Environmental representative on matters regarding Health & Safety, as well as Environmental.

C1.2.1.2.3 Officials not to benefit

The Contractor warrants that no official of the Employer has been or shall be admitted by the Contractor to any direct or indirect benefit arising from this Contract or the award thereof. The Contractor agrees that breach of this provision is a breach of the Contract.

C1.2.1.2.4 Prevention of corruption

The Employer shall be entitled to cancel the Contract and to recover from the Contractor the amount of any loss resulting from such cancellation, if the Contractor has offered or given any person any gift or consideration of any kind as an inducement or reward for doing or intending to do any action in relation to the obtaining or the execution of the Contract or any other contract with the Employer or for showing or intending to show favor or disfavor to any person in relation to the Contract or any other contract with the Employer, if the like acts shall have been done by

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



any persons employed by him or acting on his behalf whether with or without the knowledge of the Contractor in relation to this or any other Contract with the Employer.

C1.2.1.2.5 Confidential nature of documents

All maps, drawings, photographs, mosaics, plans, reports, recommendations, estimates, documents and all other data compiled by or received by the Contractor under the Contract shall be the property of the Employer, shall be treated as confidential and shall be delivered only to the Employer's Agent or his duly authorized representative on completion of the Works; their contents shall not be made known by the Contractor to any person other than the personnel of the Contractor performing services under this Contract without the prior written consent of the Employer.

C1.2.1.2.6 Returns of labour (EPWP), SMME, plant, equipment and material

The Contractor shall provide a return in detail in the form and at such intervals as the Employer's Agent or his duly authorized representative may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting constructional plant, equipment and material as the Employer's Agent or his duly authorized representative may require. Contractor to report on SMME's as per requirements of JW6.1-

C1.2.1.2.7 Materials and workmanship

All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Employer's Agent's instructions and shall be subjected from time to time to such tests as the Employer's Agent may direct at the place of manufacture or fabrication, or on the Site or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the Works for testing as may be selected and required by the Employer's Agent. All testing equipment and instruments provided by the Contractor shall be used only by the Employer's Agent or by the Contractor in accordance with the instructions of the Employer's Agent.

- a) No material not conforming with the Specifications in the Contract shall be used for the Works without prior written approval of the Employer and instruction of the Employer's Agent, provided always that if the use of such material results or may result in increasing the Contract Price, the procedure in GCC clause 6.3 (Variations) shall apply.

C1.2.1.2.8 Examination of the work before covering up

No work shall be covered up or put out of view without the approval of the Employer's Agent or his duly authorize representative and the Contractor shall afford full opportunity for the Employer's Agent or his duly authorize representative to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Employer's Agent whenever any such work or foundations is or are ready or about to be ready for examination. The Employer's Agent or his duly authorized representative shall without unreasonable delay, unless he

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
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considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such work or of examining such foundations.

C1.2.1.2.9 Employer's Agent's power to order removal of improper work and materials

The Employer's Agent or his duly authorized representative shall during the progress of the Works have power to order in writing from time to time, and the Contractor shall execute at his cost and expense, the following operations the:

- a) removal from the Site within such time or times as may be specified in the order of any materials which in the opinion of the Employer's Agent are not in accordance with the Contract;
- b) substitution of proper and suitable materials; and
- c) removal and proper re-execution (notwithstanding any previous test thereof or interim payment therefore) of any work which in respect of materials or workmanship is not in the opinion of the Employer's Agent or his duly authorized representative in accordance with the Contract.

C1.2.1.2.10 Default of Contractor in carrying out Employer's Agent's or his duly authorized representative's Instructions

In case of default on the part of the Contractor in carrying out an instruction of the Employer's Agent or his duly authorized representative, the Employer shall be entitled to employ and pay other persons to carry out the same, and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the Employer and may be deducted by the Employer from any monies due or which may become due to the Contractor.

C1.2.1.2.11 Date falling on public holiday or weekend

Where under the terms of the Contract any act is to be done or any period is to expire upon a certain day and that day or that period fall on a day of rest or recognized holiday or weekend, the Contract shall have effect as if the act were to be done or the period to expire upon the working day following such day.

C1.2.1.2.12 Ambiguities and inconsistencies

The Employer or the Contractor shall notify the other as soon as either becomes aware of an ambiguity or inconsistency in or between the documents, which are part of this Contract. Governed by the spirit and intention of the Contract, the Employer shall give a binding instruction resolving the ambiguity or inconsistency.

C1.2.1.2.13 False claims by the Contractor

- a) Failure, by the Contractor, to demonstrate or present any feature declared during the procurement stage shall constitute grounds for Contract termination or the market related equivalent price discount, if no market related value is available, the Employer shall give a final ruling on the amount. This shall be at the discretion of the Employer based on the implication of such omission. Should the Contractor refuse to accept the Employer's price, the Contract shall be terminated.
- b) Any false claims by the Contractor or his staff (with or without his knowledge), based on Works to be performed or completed per site stage shall constitute grounds for Contract termination and result in blacklisting on the Employer's database.

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
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Part 1 Agreement and Contract Data

The Contractor shall note that any of the above shall constitute non-performance on the part of the Contractor, further resulting in him forfeiting his full Contract Guarantee.

Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4		
Part	T1	T2	C1	C2	C3	C4



C1.2.2 Part 2: data provided by the Contractor

GCC Clause	Information																					
Clause 1.1.9	<p>The name of the Contractor is</p> <p>The Contact person is.....</p>																					
Clause 1.2.1.2	<p>The address of the Contractor is:</p> <table border="0"> <tr> <td>Physical</td><td>Postal</td><td>Tel:</td></tr> <tr> <td>.....</td><td>.....</td><td></td></tr> <tr> <td>.....</td><td>.....</td><td>Fax:</td></tr> <tr> <td>.....</td><td>.....</td><td></td></tr> <tr> <td>.....</td><td>.....</td><td>Email:</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> </table>	Physical	Postal	Tel:	Fax:	Email:
Physical	Postal	Tel:																				
.....																					
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.....																				
Clause 6.8.3	<p>The variation in cost of special materials is</p> <table border="0"> <tr> <td>Type</td><td>Unit</td><td>Rate</td></tr> </table> <p style="text-align: center; font-size: 2em; font-weight: bold;"><i>NOT APPLICABLE</i></p>	Type	Unit	Rate																		
Type	Unit	Rate																				

Employer:		Contractor:	
Witness:		Witness:	

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Johannesburg Water (SOC) Ltd



VOLUME 1

PART 1.3 : FORMS AND SECURITIES



Employer:		Contractor:	
Witness:		Witness:	

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Forms and Securities

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Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4			
Part	T1	T2	C1	C2	C3	C4	C5



C1.3 FORMS AND SECURITIES

FORMS FOR COMPLETION BY THE CONTRACTOR

THE FOLLOWING FORMS ARE TO BE COMPLETED BY THE CONTRACTOR AFTER THE TENDER HAS BEEN AWARDED TO THE SUCCESSFUL TENDERER

- a) Form of Guarantee
- b) Blasting Indemnity
- c) Agreement in terms of the Occupational Health and Safety Act
- d) Occupational Health And Safety Indemnity Undertaking

The forms will be completed by the Contractor who will be instructed to do so in the Form of Acceptance. The completed forms will become part of the Contract.

The Form of Guarantee is a pro forma document. The Contractor will provide an original document, from a financial institution, with the same text within the time stated in the Contract Data. Only a Bank or approved Insurance Company or Guarantee Corporation is acceptable as Guarantor.



Employer:		Contractor:	
Witness:		Witness:	

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Supply and Installation of STS Prepayment Water Meters
in Cosmo City – Phase 2

Forms and Securities

C1.3.1 Form of Guarantee

TO BE PRINTED ON THE OFFICIAL LETTERHEAD OF THE GUARANTOR.

PERFORMANCE GUARANTEE

WHEREAS Johannesburg Water (SOC) Ltd (hereinafter referred to as “the Employer” or “beneficiary”) entered into a Contract with

(hereinafter called “the Contractor”)

on the _____ day of _____ 20____ for

at _____

AND WHEREAS it is provided by such Contract that the Contractor shall provide the Employer with security by way of a guarantee for the due and faithful fulfilment of such Contract by the Contractor;

AND WHEREAS _____
has/have at the request of the Contractor, agreed to such guarantee;

NOW THEREFORE WE, _____
Do hereby guarantee and bind ourselves jointly and severally as Guarantor and Co-principal Debtors to the Employer under renunciation of the benefits of division and excussion for the due and faithful performance by the Contractor of all the terms and conditions of the said Contract, subject to the following conditions:

1. The Employer shall, without reference and/or notice to us, have complete liberty of action to act in any manner authorised and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the Completion Date of the Works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alteration of the Completion Date which the Employer may make, give, concede or agree to under the said Contract
2. This guarantee shall be limited to the payment of a sum of money.
3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.
4. This guarantee shall remain in force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate 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
5. Our total liability hereunder shall not exceed the sum of _____



Employer:		Contractor:	
Witness:		Witness:	

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_____ (R _____)

6. The guarantor reserves the right to withdraw from this guarantee by depositing the Guaranteed Sum with the beneficiary, whereupon the Guarantor's liability hereunder shall cease.

7. We hereby choose our address for the serving of all notices for all purposes arising herefrom as

IN WITNESS WHEREOF this guarantee has been executed by us at _____

on this _____ day of _____ 20____

As witnesses

1. _____

Signature

2. _____

Duly authorised to
sign on behalf of

Address



Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4			
Part	T1	T2	C1	C2	C3	C4	C5

Johburg

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Supply and Installation of STS Prepayment Water Meters
in Cosmo City – Phase 2

Forms and Securities

C1.3.2 Blasting Indemnity

Given by _____

*Company Registration No. _____

Address _____

a *Company incorporated with limited liability according to the company laws of the Republic of South Africa, *Partnership, *Close Corporation, *Public Company (hereinafter called the Contractor), represented herein by _____ in his capacity as the Contractor's

_____ duly authorised hereto by a resolution of the Contractor dated

_____ a certified copy of which resolution is attached to this Indemnity.

WHEREAS the Contractor has entered into a Contract with the Johannesburg Water (SOC) Ltd (hereinafter called the Employer) for,

_____ and the Company requires this Indemnity from the Contractor

NOW THEREFORE THIS DEED WITNESSETH that the Contractor does hereby indemnify and hold harmless the Company in respect of all loss or damage that may be incurred or sustained by the Employer by reason of or in any way arising out of or caused by blasting operations that may be carried out by the Contractor in connection with the aforementioned Contract and also in respect of all claims that may be made against the Employer in consequence of such blasting operations, by reason of or in any way arising out of any accidents or damage to persons, life or property or any other cause whatsoever, and also in respect of all legal or other expenses that may be incurred by the Employer in examining, resisting or settling any such claims; for the due performance of which the Contractor binds itself according to law.

THUS DONE AND SIGNED for and on behalf of the Contractor at _____ on the

_____ day of _____ 20____ in the presence of the subscribing

witnesses.

As witnesses

1. _____

2. _____

Signature

Duly authorised to
sign on behalf of

Address



Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4			
Part	T1	T2	C1	C2	C3	C4	C5



Forms and Securities

C1.3.3 Health and Safety Contract Between Employer and Contractor In Terms of Section 37(2) Of The Occupational Health and Safety Act No 85 Of 1993

Written agreement between Johannesburg Water ((Proprietary) Limited (hereinafter referred to as “the

Employer) and _____ (hereinafter referred to as “the mandatory”) as envisaged by Section 37(2) of the Occupational Health and Safety Act, No. 85, of 1993 as amended.

I _____ representing

_____ (mandatory) do hereby acknowledge that

_____ (mandatory) is an employer in its own right and shall be regarded as the employer for purposes of the contract work specified in the body of the principal agreement with duties as prescribed in the Occupational Health and Safety Act, No. 85 of 1993 as amended so as to ensure that all work will be performed or machinery and plant used in accordance with the provisions of the said Act. I furthermore agree to comply with the requirements of the Employer as contained in the Occupational Health and Safety Specification included with the principal agreement and to liaise with the employer should I, for whatever reason, be unable to perform in terms of this agreement.

Signed this _____ day of _____ at _____

Signature on behalf of mandatory _____

Signature on behalf of Employer _____

Compensation Fund Registration No. of mandatory _____

Good Standing Certificate : ☐ yes ☐ no (tick one box)



Employer:		Contractor:	
Witness:		Witness:	

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Forms and Securities

C1.3.4 Health and Safety Contract: General Information

1. The Occupational Health and Safety Act comprises Sections 1 to 50 and all un-repealed regulations promulgated in terms of the former Machinery and Occupational Safety Act No 6 of 1983 as amended, as well as other regulations which may be promulgated in terms of the OHS Act.
2. 'Mandatory' is defined as including an agent, a contractor or a subcontractor for work, but without derogating from his status in his own right as an employer or user of plant and machinery
3. Section 37 of the Occupational Health and Safety Act potentially punishes employers (principals) for the unlawful acts or omissions of mandataries (contractors) save where a written agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Act by the mandatory.
4. All documents attached or referred to in the above agreement form an integral part of the agreement.
5. To perform in terms of this agreement mandataries must be familiar with the relevant provisions of the Act.
6. Mandataries who utilise the services of their own mandataries (subcontractors) are advised to conclude a similar written agreement.
7. Be advised that this agreement places the onus on the mandatory to contact the Employer in the event of inability to perform as per this agreement. The Employer, however, reserves the right to unilaterally take any steps as may be necessary to enforce this agreement.
8. The contractor shall be responsible for the full and proper implementation of the terms and provisions of the Act and its regulations in the area in which the work is to be undertaken by the Contractor.
9. The Contractor shall be responsible for the well-being, in relation to health and safety, of all persons coming upon or into such area in accordance with that legislation, including the implementation of any directives issued by management of the Employer in this respect.
10. The work to be done is _____
11. The area in which the work is to be conducted is _____
12. The Contractor shall familiarise himself with such area and all risks existing thereon and undertakes to report to the representative of the Employer any hazard or risk to health and safety which arises during the contract work in the area concerned and over which the Contractor may have no control. All necessary and appropriate safety / health equipment shall be issued by the Contractor to all persons working on or coming into the area.

Employer:		Contractor:	
Witness:		Witness:	

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Supply and Installation of STS Prepayment Water Meters
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Forms and Securities

C1.3.4.1 Occupational Health and Safety Indemnity Undertaking

I, the undersigned _____
in my capacity as _____
of the firm _____

1.0 hereby undertake to ensure that I/my firm and/or employees and/or subcontractors and/or his employees -

1.1 comply strictly with the provisions of the Occupational Health and Safety Act of 1993 (as amended) and/or the regulations promulgated in terms thereof, with specific reference to section 37(2) of the said act, as well as any relevant legislation, in the course of the performance/execution of any service and/or work in, to or on any of the Employer's buildings, construction sites and/or premises;

1.2 ensure that consultants and/or visitors comply with any instructions and measures relating to occupational health and safety, as prescribed by the Employer; and

1.3 comply strictly with the statutorily prescribed work systems, operational equipment, machinery and occupational health and safety conditions;

2.0 and as an independent employer and contractor, hereby indemnify, in terms of the above undertakings, the Employer -

2.1 in respect of any costs that I/my firm and/or employees and/or subcontractors and their employees may incur of necessity in compliance with the above undertakings; and

2.2 against any claims that may be instituted against the Employer and/or any liability that the Employer may incur, whether instituted and/or caused by me/my firm's employees, agents, consultants, subcontractors and/or their employees and visitors or the Employer's clients or neighbours in respect of any incidents related to my/my firm's activities and as a result of which the occupational health and safety of the persons involved have been detrimentally affected; and

2.3 against similar claims that I, managers or directors of my firm may have against the Employer and any damages for which I, managers or directors of my firm hold the Employer liable.

3.0 My firm's compensation commissioner number is _____
and I confirm that my firm and its subcontractors' fees have been paid up and obligations in respect of the compensation commissioner have been complied with and further that I shall furnish proof thereof in writing on request.



Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4			
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Supply and Installation of STS Prepayment Water Meters
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4.0 I hereby confirm that I have the authority to sign this indemnity undertaking and that the Employer is not obliged to confirm such confirmation.

Signed at _____ This _____ day
of _____

Signature

Capacity

As witnesses:

1 _____
2 _____



Employer:		Contractor:	
Witness:		Witness:	

Volume	1	2	3	4
Part	T1	T2	C1	C2



Johannesburg Water SOC Ltd



VOLUME 1

PART 2: PRICING DATA

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Witness:		Witness:	

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Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
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C2 PRICING DATA

C2.1 PRICING INSTRUCTIONS

C2.1.1 GENERAL PREAMBLE TO THE BILL OF QUANTITIES

- a) **The Contract is to be constructed using labour intensive methods. In exceptional cases where the use of plant is required, the Contractor must motivate and obtain written permission before the work is undertaken with plant. Payment will not be made for unauthorized use of plant to carry out work.**
- b) All items in the Bill of Quantities, except where otherwise specified in Clause 8 of a Standardised Specification or in the Project Specification, shall be measured and shall cover operations as recommended in the standard system of measurement of civil engineering quantities, published under the title "Civil Engineering Quantities", by the South African Institution of Civil Engineering.
- c) The basis and principles of measurement and payment are described in this section (Pricing Instructions) and Clause 8 of each of the Standardised Specifications for Civil Engineering Construction. The applicable SANS 1200 Standardised Specifications are listed in the Scope of Work, Portion 1: Project Specification. Portion 2: comprises the Technical specifications for the works of each discipline in this contract.
- d) Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Clause 8 of each Standardised Specification, read together with the relevant clauses of the Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified. Should any requirements of the measurement and payment clause of the applicable Standardised Specification or the Scope of Work, conflict with the terms of the Bill of Quantities, the requirements of the Standardised Specification or Scope of Work, as applicable, shall prevail.
- e) The clauses in a specification in which further information regarding the Schedule item may be found are listed in the "Payment Refers" column in the Schedule. The reference clauses indicated are not necessarily the only sources of information in respect of listed items. Further information and specifications may be found elsewhere in the Contract Documents. Standardised Specifications are identified by the letter or letters which follow SANS in the SANS 1200 series of specifications, e.g. G for SANS 1200G.
- f) Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
- g) The quantities set out in the Bill of Quantities are the estimated quantities of the Contract Works, but the Contractor shall be required to undertake whatever quantities may be directed by the Engineer from time to time. The Contract Price for the completed Works shall be computed from the actual quantities of work done, valued at the relevant unit rates and/or prices.
- h) The rates and/or prices to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the several items. Such rates and/or prices 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, as well as overhead charges and profit. Reasonable charges shall be inserted as these shall be used as a basis for assessment of payment for additional work that may have to be carried out.



Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
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- i) The units of measurement described in the Bill of Quantities are metric units. Alternatives used 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	=	meganewtom-metre
m ³ km	=	cubic metre-kilometre	P Csum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%	=	percent
MPa	=	megapascal	kW	=	kilowatt

- j) For the purpose of this Bill of Quantities, where applicable, the following words shall have the meanings hereby assigned to them:

Unit : The unit of measurement for each item of work as defined in the SANS Standard Specification for South African National Standards.

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

Rate : The agreed payment per unit of measurement.

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

Lump sum: An agreed amount for an item, the extent of which is described in the Bills of Quantities, but the quantity of work of which is not measured in any units.

- k) Arithmetical errors in the Bill of Quantities shall be corrected in accordance with Clause C3.9 of the Conditions of Tender. Should there be any discrepancy between rates and/or prices written in the Assessment Schedule and the Bill of Quantities, the latter shall govern.
- l) The Bill of Quantities shall be completed by hand in **INK or TYPED**.

C2.1.2 SPECIAL PAYMENT CONDITIONS

This clause shall be read in conjunction with the 'Penalties' clause(s). Where the penalty clause shall always receive precedence over this clause, should it be found that duplicative financial corrective measures exists.

C2.1.2.1 PROVIDED PREVIOUSLY

The Contractor shall not re-execute works under this Contract where he has successfully executed works for the Employer under a previous contract(s) that comply with the requirements of this Contract. However, where applicable the Contractor shall:

- clearly state this in his qualifications; and
- still provide the associated rates and prices in the schedule in the associated line item, but not calculate an associated amount.

The Employer shall at his sole discretion decide to re-execute such works.

C2.1.2.2 SECURITY

The Contractor shall have been deemed to have included all security related costs in the Provisional and General item rates, including allowing for minimum 60% (high risk areas) of the sites requiring security provision for the Employer and Engineer representative(s).



Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
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C2.1.2.3 MATERIALS AND EQUIPMENT

The Employer shall not provide any works material and equipment, as this shall be provided by the Contractor and deemed to have been included in his provided activity rates or prices.

C2.1.2.4 PERMITS AND WAY-LEAVES

All associated costs to obtain permits and way-leaves as required for the execution of the works, where such affect other services, shall be deemed to have been included in the scheduled rates for SANS 1200A or SANS 1200AA or SANS 1200AB where pricing provision for such items have been allowed for in the pricing schedules, alternatively it shall be deemed to be included in the various scheduled activity rates or prices provided by the Contractor

C2.1.2.5 CONFINED SPACE

The Contractor shall note that work activities shall be executed within confined spaces and it shall be deemed that allowance has been made in all activity pricing.

C2.1.2.6 PAYMENT ONLY FOR WORKS COMPLETED

The Contractor shall note that payment shall only be made for Works activities successfully (delivering the end result) executed, complying with the quality requirements and provided to the Engineer or his duly authorised representative.

C2.1.2.7 CONTRACT PRICE ADJUSTMENT

The effect of changes in price or law on the amounts due shall be adjusted on the following basis:

- No price adjustment over the first 12 months period of the Contract
- On the 12-month anniversary date of the signing of the agreement the rates shall be adjusted by twelve-month year on year CPI index (as published in the bulletin PO141.1 of statistics South Africa) ruling on the 12-month anniversary date of the signing of the agreement and fixed at this value for the following 12-month period. Subsequent 12-month periods shall be dealt with on a similar basis.
-

C2.1.2.8 CONTRACTOR APPOINTMENT

Contractors will only be appointed for value of work in their CIDB grading category only.

C2.1.2.9 RATES NEGOTIATION

Rates will be negotiated with the short listed Tenderer.

C2.1.2.7 SMME PORTION OF THE WORKS

The Main Contractor shall retain liability and responsibility for the management, scheduling, and quality control of all works performed by the sub-contractors. After appointment of the Main Contractor, Johannesburg Water will supply the Main Contractor with a list of SMMEs which the Main Contractor can approach to provide rates. The Main Contractor will be expected to conduct a competitive process to recommend a Sub-Contractor or Sub-Contractors to Johannesburg Water. It is the responsibility of the main contractor to evaluate all rates provided by the Sub-Contractors to ensure that they are market related and do not exceed the allocated Provisional Sum. Johannesburg Water and other stakeholders will be available to oversee the appointment process of subcontractors.

An allowance has been made for the contractor for the management fee and handling cost for the Provisional sum items but is limited to a maximum of 10% for all claims.



Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
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The Contractor shall ensure that the Subcontractor(s) complies with the paying all amounts due in respect of his employees and himself in terms of all relevant legislation and regulations including, but not confined to, the

Income Tax Act, the

- Compensation for Occupational Injuries and Diseases Act,
- Unemployment Insurance Act,
- Basic Conditions of Employment Act
- Monitoring of the Quality of Work completed by the Sub-contractor/SMME
- Skills transfer during the execution of the project
- Compliance with all aspects of the Scope of Work
- Assistance with sourcing of applicable material in line with the technical data sheets

Further an allowance has been made for “Training” – this is related to CETA accredited training which is to be agreed with the Employer during project execution. No amount can be claimed under this item for on-site or on-the-job training, only for accredited training which the SMME receives.



Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
Part	T1	T2	C1	C2	C3	C4	C5



C2.1.3 HEALTH AND SAFETY

The principal Contractor's health and safety plan has to follow the framework as laid out in the HEALTH AND SAFETY SPECIFICATION AND ENVIRONMENTAL MANAGEMENT PLAN, as a minimum.

No payment shall be applicable where equipment is not provided and services are not rendered in terms of the approved Health and Safety Plan. Additionally, the Contractor shall also be penalised in terms of Clause (30) of the Occupational Health and Safety Act 183 (1993), Construction Regulations (2014).

C2.1.3.1 COMPILATION OF HEALTH AND SAFETY PLAN

Unit: Sum

The rate shall include the complete cost for the provision of resources (human and equipment), communication, transportation and travelling, documentation of activities and reporting activities required to compile a Health and Safety Plan as per the Health and Safety Specifications contained in Volume 2, and approval of such plan thereof. Remuneration shall be a lump sum.

C2.1.3.2 IMPLEMENTATION OF HEALTH AND SAFETY PLAN

Unit: Sum

The rate shall include the complete cost for the provision of resources (human and equipment), communication, transportation and travelling, documentation of activities and reporting activities required to fully comply with the implementation and maintenance of the Health and Safety Plan. Remuneration shall be on a monthly basis for services rendered, by dividing the total sum tendered by the construction duration.

C2.1.3.3 SAFETY OFFICER

Unit: Sum

The rate shall include the wages and salary that is to be paid to the safety officer/s, whose responsibility it is to ensure that all activities required fully comply with the Health and Safety Plan as per the Health and Safety Specifications contained in Volume 2 for the duration of the Contract. The rate shall be on a monthly basis for services rendered, by dividing the total sum tendered by the construction duration.

NOTE: The Contractor shall clearly state the number of Health and Safety officers in the provided space in the Bill of Quantities that he has allowed for in his price. Where no number is provided the Employer shall assume that adequate provision, minimum one (1) per site, has been made to implement the provided Health and Safety Plan successfully.

C2.1.4 EMP IMPLEMENTATION AND MAINTENANCE

Unit: Sum

The rate shall include the complete cost for the provision of resources (human and equipment), communication, transportation and travelling, documentation of activities and reporting activities required to fully comply with the implementation and maintenance of the EMP contained in Volume 2 for the duration of the Contract. Remuneration shall be on a monthly basis for services rendered, by dividing the total sum tendered by the construction duration.

No payment shall be applicable where equipment is not provided and services are not rendered in terms of the approved EMP.



Employer:		Service Provider	
Witness:		Witness:	

Volume	1	2	3	4			
Part	T1	T2	C1	C2	C3	C4	C5



C2.2 BILL OF QUANTITIES

Note: The Bills of Quantities are sequentially numbered and page numbering coincides with the Tender document page numbering.



Employer:		Service Provider	
Witness:		Witness:	

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

DESCRIPTION	AMOUNTS	
SCHEDULE A: PRELIMINARY AND GENERAL	R	-
SCHEDULE B: SECONDARY MAINS - RETICULATION LEAKAGE DETECTION AND REPAIR	R	-
SCHEDULE C: SITE CLEARANCE	R	-
SCHEDULE D: EARTHWORKS	R	-
SCHEDULE E: BEDDING	R	-
SCHEDULE F: ERF CONNECTIONS	R	-
SCHEDULE G: YARD CONNECTIONS	R	-
SCHEDULE H: ON PROPERTY PLUMBING	R	-
SCHEDULE I: METER INSTALLATION	R	-
SCHEDULE J: OCCUPATIONAL HEALTH AND SAFETY	R	-
SUBTOTAL 1.....	R	-
10% Contingencies	R	-
SUBTOTAL 2.....	R	-
15% VAT	R	-
Amount Incl.VAT	R	-

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
A.	SABS 1200A & 1200AB	SCHEDULE A: PRELIMINARY AND GENERAL				
	8,3	FIXED-CHARGE ITEMS				
A.1	8.3.1	Contractual requirements	Sum	1		R -
	8.3.2	PROVISION OF FACILITIES ON SITE:				
	8.3.2.1	Facilities for Engineer:				
A.2	PSA 8.3.2.1.a	a) Facilities for the Engineer (No:1) and Parking	Sum	1		R -
A.3		b) JW ISD Team (No:1)	Sum	1		R -
A.4		c) QCO's and CLO Office (No.1)	Sum	1		R -
A.5		d) Boardroom (No:1)	Sum	1		R -
A.6		e) Parking (No.2)	Sum	1		R -
A.7		f) Nameboards (No=2)	Sum	1		R -
A.8		g) Communication	Sum	1		R -
	8.3.2.2	Facilities for the Contractor				
A.9		a) Offices and storage sheds	Sum	1		R -
A.10		b) Workshops				
A.,11		c) Ablution and latrine facilities	Sum	1		R -
A.12		d) Tools and equipment	Sum	1		R -
A.13		e) Water supplies, electric power and communications	Sum	1		R -
A.14		f) Dealing with water (SANS 1200A 5.5)	Sum	1		R -
A.15		g) Access (see sub-clause 5.8)	Sum	1		R -
		SMME Fixed Charged Items				
A,16		a) Establishment of storage and Facilities for the SMMEs	Sum	1		R -
A.17		b) Tools and equipment	Sum	1		R -
A.18		c) Other Fixed related obligations	Sum	1		R -
A.19		d) Removal of Facilities	Sum	1		R -
A.20	PSA 8.3.5.2	OHS Act Obligations (Compilation of OHSAct file)	Sum	1		R -
A.21	PSA 8.3.5.3	EMP Obligations	Sum	1		R -
A.22	PSA 8,3,3	Other fixed charged obligations Specify rate composition	Sum	1		R -
A.23	8.3.4	Removal of site Establishment	Sum	1		R -
	8,4	TIME RELATED ITEMS				
A.24	8.4.1	Contractual requirements	Month	18		R -
A.25	8.4.2	Contractor's Supervision for the duration of construction	Month	18		R -
TOTAL CARRIED FORWARD						R -

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
TOTAL BROUGHT FORWARD						R -
A.26	8.4.2.1	Facilities for Engineer: a) Facilities for the Engineer (No:1) and Parking	Month	18		R -
A.27		b) Health & Safety Specialist for a period of 24 months	Month	18		R -
A.28		c) JW ISD Team (No:1)	Month	18		R -
A.29		d) QCO's and CLO Office (No.1)	Month	18		R -
A.30		e) Boardroom (No:1)	Month	18		R -
A.31		f) Parking (No.2)	Month	18		R -
A.32		g) Nameboards (No=2)	Month	18		R -
A.33		h) Communication	Month	18		R -
A.34	8.4.2.2 8.4.4	Facilities for the Contractor: Contractor's head office overhead costs for the duration of the Contract	Month	18		R -
A.35		Contractor's Supervision for the duration of the Contract	Month	18		R -
A.36		a) Offices and storage sheds	Month	18		R -
A.37		b) Ablution and latrine facilities	Month	18		R -
A.38		c) Tools and equipment	Month	18		R -
A.39		d) Water supplies, electric power and communications	Month	18		R -
A.40		e) Dealing with water (SANS 1200A 5.5)	Month	18		R -
A.41		f) Access (see sub-clause 5.8)	Month	18		R -
A.42	PSA 8.4.6.1	g)Compliance with OHS & EM Plans including Safety Officer Salary	Month	18		R -
		SMME TIME-RELATED ITEMS				
A.43		a) Storage Facilities	Month	18		R -
A.44		b) Tools and equipment	Month	18		R -
A.45	8.4.3	c) Contractor's Supervision for the duration of construction	Month	18		R -
A.46		d) Other time related obligations	Month	18		R -
A.47		SMME's Preliminary and General	Prov.Sum	1	R 6 750 000,00	
		a) Extra over items 1.15.3 above for overhead charges and profit	%	0,0	0%	R -
A.48	PSA 8.4.6.2	Security Services on-site	Month	18		R -
A.49	PSA 8.9	Political and Community Unrest (Standing time)	day	20		R -
TOTAL CARRIED FORWARD						R -

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
TOTAL BROUGHT FORWARD						R -
	PSA 8.5	PROVISIONAL SUMS STATED BY ENGINEER				
A.50		a) Community Liaison Officer (No:2) Salaries and cellphone allowance	Prov. Sum	1	R 414 000,00	
A.51		b) JW ISD representative	Prov. Sum	1	R 600 000,00	
A.52		c) Community awareness material	Prov. Sum	1	R 100 000,00	
A.53		d) QCF (No:10)	Prov. Sum	1	R 1 980 000,00	
A.55		e) Training but not limited to the following: Plumbing	Prov. Sum	1	R 450 000,00	
A.56		f) Reinstatement of Asphalt by JRA	Prov. Sum	1	R 150 000,00	
		Overheads, charges and profit on item A.50 to A.56	%	R -	0%	
		TEMPORARY WORKS				
		Existing Services				
A.58		a) Excavation by hand in all material to expose existing services	m³	R 100,00		R -
A.59		b) Temporary protection of services	Sum	1		R -
A.60		c)Accomodation of traffic	Sum	1		R -
	8.7	DAY WORKS (the rate shall cover overhead charges and profit of all day works itesm listed) (to be executed on instruction from the Engineer) <i>Labour</i>				
A.59		a) Unskilled	hr	150		R -
A.60		b) Semi skilled	hr	150		R -
A.61		c) Skilled	hr	150		R -
A.62		d) Armed Security guard	hr	150		R -
TOTAL CARRIED FORWARD						R -

JOHANNESBURG WATER
CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
TOTAL BROUGHT FORWARD						R -
A.63		TLB's (Tractor loader backhoe) a) 2x4	hr	48		R -
A.64		b) 4x4	hr	48		R -
		Compactors				
A.65		a) Wacker	hr	48		R -
A.66		b) Plate compactor	hr	48		R -
		Generator (Wet Rate)				
A.67		a) 3kVA	hr	100		R -
A.68		b) 5kVa	hr	100		R -
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER
CONTRACT NUMBER: JW14335
SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
B.	SABS 1200DB	SCHEDULE B: SECONDARY MAINS - RETICULATION LEAKAGE DETECTION AND REPAIR				
	8.3.1	SITE CLEARANCE				
B.1	8.3.1(c)	a) Remove topsoil to depth of 200mm, 2m wide	m ²	1 480		R -
B.2		b) Saw cut, remove and dispose of asphalt and stone crush base up to 200mm thickness	m ²	215		R -
B.3		c) Saw cut, remove and dispose of unreinforced concrete up to 150mm thickness	m ²	500		R -
B.4		d) Remove and temporarily store paving block units	m ²	1 180		R -
B.5		e) Remove and temporarily store grass sods	m ²	1 480		R -
B.6		f) Remove and temporarily store all types of kerbs	m	1 550		R -
B.7		EXCAVATIONS				
		Excavate in all materials for trenches, backfill, compact, and dispose of surplus / unsuitable material for the following diameters:				
B.8		a) 90 mm diameter	m	1 600		R -
B.9		b) 110 mm diameter	m	3 820		R -
B.10		c) 160 mm diameter	m	2 500		R -
B.11		d) 200 mm diameter	m	320		R -
B.12		e) 250 mm diameter	m	320		R -
B.13		f) 315 mm diameter	m	320		R -
B.14		Extra-over items for 2.2.1 (a-f)	m	100		R -
B.15		i) Intermediate excavation	m ³	770		R -
B.16		ii) Hard rock excavation	m ³	200		R -
B,17	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	50		R -
	8.3.3	EXCAVATION ANCILLARIES				
B.15	8.3.3.1	Make up deficiency in backfill material (Provisional.)				
B.16		i) From other necessary excavations on site	m ³	630		R -
B.17	8.3.3.1(c) 8.3.3.3	ii) by importation from commercial sources or off-site sources selected by the Compaction in road reserves	m ³	340		R -
B.18	8.3.4(a)	Shore trench opposite structure or service (Provisional)	m	200		R -
B,19	8.3.5	Existing services that intersect or adjoin a pipe trench				
B.20		a) Services that intersect a trench	No.	270		R -
B.21		b) Services that adjoin a trench	m	1 600		R -
		FINISHES				
	PSDB8.3.6.1(a)	a) Reinstatement of road crossings including the supply and installation of hydrofill for reinstatement of road crossings, 300mm thick as per JRA standard drawing.	m ²	2 656		R -
B.21		b) Re-instate unreinforced concrete, complete	m ²	112		R -
B.22		c) Re-instate paving blocks units, complete	m ²	1 240		R -
B.23		d) Re-instate grass sods, complete	m ²	1 480		R -
B.24		e) Re-instate all types of kerbing, complete	m	1 550		R -
		f) Top soiling including trimming, filling, topsoiling and levelling of verges, removal of debris, rocks, etc. using stockpiled material.	m ²	150		R -
TOTAL CARRIED FORWARD						R -

TOTAL BROUGHT FORWARD						R	-
		BEDDING					
		Provision of bedding from trench excavation					
B.25		a) Selected granular material	m³	190		R	-
B.26		b) Selected fill	m³	130		R	-
	8.2.2.3	From commercial sources (Provisional)					
B.27		a) Selected granular material	m³	190		R	-
B.28		b) Selected fill	m³	130		R	-
B.29	8.2.3	c) 19mm Crushed stone for sub-surface drainage Concrete bedding cradle Class 19/20	m³	480		R	-
B.30	8.2.4	Encasing of pipes in concrete (20MPa)	m³	480		R	-
	SABS1200L 8.2.1	PIPES					
		Supply, lay and bed (Class B) complete with couplings including short lengths for pipes of the following materials and diameters HDPE Class 12					
B.31		a) 90 mm diameter High-Impact uPVC Class 16 supplied with one Victaulic Clamp per pipe	m	2 000		R	-
B.32		a) 110 mm diameter	m	5 500		R	-
B.33		b)160 mm diameter	m	640		R	-
B.34		c) 200 mm diameter	m	620		R	-
B.35		d) 250 mm diameter	m	620		R	-
B.36		e) 315 mm diameter	m	620		R	-
		Steel flanged pipes					
B.37		1)100 mm diameter	m	3 500		R	-
B.38		2)150 mm diameter	m	540		R	-
B.39		Locating, disinfecting and pressure testing of existing dormant road reserve water pipe of all materials.	m	3 200		R	-
	8.2.2	SPECIALS AND FITTINGS					
		Extra-over itemS 2.6.1 to 2.6.6 for the supplying, handle, lay and bedding (Class B) of specials complete with couplings for High-Impact uPVC Class 16 with victaulic ended joints.					
		Bends					
		90 degree bends					
B.40		a) 90 mm	No.	9		R	-
B.41		b) 110 mm	No.	25		R	-
B.42		c) 160 mm	No.	9		R	-
B.43		d) 200mm	No.	3		R	-
B.44		e) 250mm	No.	3		R	-
		45 degree bends					
B.45		a) 90 mm	No.	9		R	-
B.46		b) 110 mm	No.	25		R	-
B.47		c) 160 mm	No.	9		R	-
B.48		d) 200mm	No.	3		R	-
B.49		e) 250mm	No.	3		R	-
		22.5 degree bends					
B.50		a) 90 mm	No.	6		R	-
B.51		b) 110 mm	No.	22		R	-
B.52		c) 160mm	No.	6		R	-
B.53		d) 200 mm	No.	3		R	-
B.54		e) 250mm	No.	3		R	-
		11.25 degree bends					
B.55		a) 90 mm	No.	6		R	-
B.56		b) 110mm	No.	12		R	-
B.57		c) 160mm	No.	6		R	-
TOTAL CARRIED FORWARD						R	-

TOTAL BROUGHT FORWARD						R	-
B.58		d) 200mm	No.	3		R	-
B.59		e) 250mm	No.	3		R	-
		Steel Tees: Victaulic ended to fit uPVC class 16 pipes.					
B.60		a) 250 x 250mm	No.	3		R	-
B.61		b) 200 x 200mm	No.	3		R	-
B.62		c) 200 x 160mm	No.	6		R	-
B.63		d) 160 x 160mm	No.	3		R	-
B.64		e) 160 x 110mm	No.	3		R	-
B.65		f) 160 x 90mm	No.	6		R	-
B.66		g) 110 x 110mm	No.	16		R	-
B.67		h) 110 x 90mm	No.	41		R	-
B.68		i) 90 x 90mm	No.	16		R	-
		Special Tees - plain barrel, shouldered branch					
B.69		a) 100 x 90mm	No.	16		R	-
B.70		b) 160 x 160mm	No.	6		R	-
B.71		c) 150 x 160mm	No.	9		R	-
B.72		d) 225 x 160mm	No.	6		R	-
B.73		e) 250 x 160mm	No.	3		R	-
B.74		f) 400 x 160mm	No.	3		R	-
B.75		g) 450 x 160mm	No.	3		R	-
		Reducers					
B.76		a) 110 x 90mm	No.	3		R	-
B.77		b) 160 x 110mm	No.	3		R	-
B.78		c) 200 x 160mm	No.	3		R	-
B.79		d) 250 x 200mm	No.	3		R	-
		Steel pipes reducers, flanged					
B.80		a) 150 x 100mm	No.	3		R	-
		VJ Adaptor Couplings / Joints					
B.81		a) 110mm dia	No.	6		R	-
B.82		b) 160mm dia	No.	6		R	-
B.83		c) 200mm dia	No.	3		R	-
B.84		d) 250 dia	No.	3		R	-
B.85		e) 315mm dia	No.	3		R	-
		Repair Couplings					
B.86		a) 90mm	No.	16		R	-
B.87		b) 110mm	No.	6		R	-
B.88		c) 160mm dia	No.	3		R	-
B.89		d) 200mm dia.	No.	3		R	-
B.90		e) 250mm dia.	No.	3		R	-
B.91		f) 315mm dia.	No.	3		R	-
		Flanged Adaptor CI for use with uPVC pipes					
B.92		a) 110mm dia.	No.	3		R	-
B.93		b) 160mm dia.	No.	3		R	-
B.94		c) 200mm dia.	No.	3		R	-
B.95		d) 250mm dia.	No.	3		R	-
		Blank Flanges					
B.96		(a) 315mm dia	No.	3		R	-
		Flange Adaptor (Klamflex TYPE for PVC-STEEL connections)					
B.97		a) 100mm dia. with blank flange	No.	3		R	-
TOTAL CARRIED FORWARD						R	-

TOTAL BROUGHT FORWARD						R	-
B.98	8.2.3 PSL3.10.2	b) 150mm dia.	No.	3		R	-
B.99		c) 200mm dia.	No.	3		R	-
B.100		d) 225mm dia.	No.	3		R	-
		VALVES Extra-over item 2.6 for the supplying, handle, lay, bed of valves with couplings in valve box. Complete with cutting of pipes and valve testing. CI gate to SABS 0664, Class 11, for uPVC pipes shoulded ends for Victaulic Couplingsto SABS 0996, nonrising spindle, LH closing, with cap top,as per drawing JW 03.					
B.101		a) 90mm dia.	No.	9		R	-
B.102		b) 110mm dia.	No.	9		R	-
B.103		c) 160mm dia	No.	6		R	-
B.104		d) 200mm dia.	No.	6		R	-
B.105		e) 250mm dia.	No.	6		R	-
		ENDCAPS, CI Supply, including cutting and install complete					
B.106		a) 90mm	No.	6		R	-
B.107	b) 110mm	No.	12		R	-	
B.108	c) 160mm	No.	6		R	-	
B.109	d) 200mm	No.	3		R	-	
B.110	e) 250mm	No.	3		R	-	
B.111	f) 315mm	No.	3		R	-	
	HYDRANTS Supply, handle, lay, bed, concrete encasing in hydrant chamber, cast iron fire hydrants complete in hydrant chambers and hydrant testing. As per drawing JW 01:						
B.112	a) 90 mm diameter main	No.	3		R	-	
B.113	b) 110mm dia main	No.	2		R	-	
B.114	c) 160mm dia main	No.	3		R	-	
B.115	Extra-over item for encasing joints (Denso wrapping of steel joints)	No.	26		R	-	
	CONCRETE						
	8.2.11(a)	Anchor/thrust blocks and pedestals					
B.116	8.2.11(b)	a) Concrete (15MPa minimum)	m³	4		R	-
B.117		b) Formwork	m²	32		R	-
	RETICULATION LEAKAGE DETECTION AND REPAIR						
	PS 5.13.1	a) Supply or hire specialist equipment for the detection of leaking underground water pipes, recording of leak location and size and submission of a report to engineer					
B.118		1) Noise correlation	km	10		R	-
B.119		2) Ground penetration radar	day	10		R	-
B.120		3) Accoustic sounding	day	10		R	-
TOTAL CARRIED FORWARD						R	-

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
C.	SABS 1200C	SCHEDULE C: SITE CLEARANCE				
C.1	8.2.1	Clear and grub (1 metre width)	m	45 000		R -
C.2	PSC 8.2.14	Protection of trees as ordered by Engineer	No	50		R -
C.3	8.2.10	Remove topsoil to nominal depth of 150mm and stockpile for re-use as directed by Engineer	m³	900		R -
C.4	PSC 8.2.11b	Removal of man-made surfaces, stockpile materials for later re-use				
		a) Footways and driveways				
C.5		i) Asphalt (≤ 50mm thickness)	m²	250		R -
C.6		ii) Asphalt (≥ 50 - 100mm thickness)	m²	300		R -
C.7		iii) Interlocking concrete segmental paving blocks (all colours)	m²	300		R -
C.8		iv) Concrete slabs (450 x 450mm)	m²	300		R -
C.9		v) Brick paving	m²	400		R -
C.10		vi) Grassing and vegetation	m²	700		R -
C.11		vii) Unreinforced concrete <75mm thick	m³	800		R -
C.12		viii) Reinforced concrete <75mm thick	m³	150		R -
C.13		ix) Kerbing (All types of kerbs)	m	100		R -
C.14		x) Dump rock/Stone pitching	m³	100		R -
	PSC 8.2.12.2	Backfilling and reinstatement of man-made surfaces				
		a) Backfilling and reinstatement of footways and driveways using materials recovered in item B.4 above				
C.15		i) Interlocking concrete segmental paving blocks (all colours)	m²	500		R -
C.16		ii) Concrete slabs (450 x 450mm)	m²	300		R -
C.17		iii) Brick paving	m²	400		R -
C.18		iv) Grassing and vegetation	m²	600		R -
C.19		v) Kerbing (All types of kerbs)	m	75		R -
C.20		vi) Dump rock/Stone pitching	m³	50		R -
	PSC 8.2.12.2	a) Backfilling and reinstatement of footways and driveways using new materials				
C.21		i) Asphalt (≤ 50mm thickness)	m²	200		R -
C.22		ii) Asphalt (≥ 50 - 100mm thickness)	m²	60		R -
C.23		iii) Interlocking concrete segmental paving blocks (all colours)	m²	300		R -
C.24		iv) Concrete slabs (450 x 450mm)	m²	450		R -
C.25		v) Brick paving	m²	450		R -
C.26		vi) Grassing and vegetation	m²	600		R -
C.27		vii) Unreinforced concrete <75mm thick	m³	350		R -
C.28		viii) Reinforced concrete <75mm thick	m³	120		R -
C.29		ix) Kerbing (All types of kerbs)	m	75		R -
C.30		x) Dump rock/Stone pitching	m³	75		R -
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
D.	SABS 1200DB &1200DA	SCHEDULE D: EARTHWORKS (PIPE TRENCHES)				
	8.3.2	Excavation				
	PSDB 8.3.2(a)	Excavate in all materials for trenches, backfill, compact, test and dispose of surplus / unsuitable material for depths exceeding 1.0m but not exceeding 2.0m for the following pipe diameters:				
D.1	8.2.10	a)110mm to 300mm diameter pipe	m	6 000		R -
	8.3.2	Extra over item3.1 for:				
D.2		1) Intermediate excavation	m ³	900		R -
D.3		2) Hard rock excavation	m ³	2 700		R -
	8.3.3	Excavation Ancilliaries				
		Make up deficiency in backfill material (Prov.)				
D.4	8.3.3.1	By importation from commercial sources within Johannesburg but selected by the Contractor	m ³	4 149		R -
D.5		From designated areas on site	m ³	2 724		R -
	PSDB 8.3.3.3	Compaction in road reserve				
D.6	8.3.5	a) Additional compaction to 93% mod AASHTO density in road reserve	m ³	7 740		R -
	PSDB 8.3.5(a)	a) Services that intersect a trench				
D.7		i) Sewer pipes up to 300mm Dia.	No.	12		R -
D.8		ii) Cables.	No.	10		R -
D.9		iii) Stormwater pipes up to 1050mm dia.	No.	15		R -
D.10		iv) Kerbs and Channels	No.	50		R -
D.11		v) Water pipes of any diameter	No.	15		R -
	PSDB 8.3.5(b)	b) Services that adjoin a trench				
D.12		i) Sewer pipes up to 300mm Dia.	m	50		R -
D.13		ii) Cables.	m	20		R -
D.14		iii) Stormwater pipes up to 1050mm dia.	m	30		R -
D.15		iv) Kerbs and Channels	m	500		R -
D.16		v) Water pipes of any diameter	m	15		R -
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER
CONTRACT NUMBER: JW14335
SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
	SABS 1200LB	SCHEDULE E: BEDDING (PIPES)				
	8.2.1	Provision of bedding from trench excavation				
E.1	PSLB 3.4.1.1	a) Selected granular material	m ³	2 678		R -
E.2	PSLB 3.4.2.1	b) Selected fill material	m ³	7 335		R -
	8.2.2.3	Provision of bedding imported from commercial sources (Provisional)				
E.3		a) Selected granular material	m ³	280		R -
E.4		b) Selected fill material	m ³	1 000		R -
E.5		c) 19mm Crushed stones bedding	m ³	30		R -
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
F.	SABS1200 DB 8.3.1	SCHEDULE F: ERF CONNECTIONS (WATER)				
		SITE CLEARANCE				
F.1	8.3.1(c)	a) Remove topsoil to nominal depth 150mm, stockpile and maintain.	m ²	500		R -
F.2	PSDB8.3.1.1	b) Saw cut, remove and dispose of asphalt and stone crush base up to 200mm thickness	m2	250		R -
F.3	PSDB8.3.1.2	c) Saw cut, remove and dispose of unreinforced concrete of up to 150mm thickness	m2	100		R -
F.4	PSDB8.3.1.3	d) Remove and temporarily store paving blocks	m2	500		R -
F.5	PSDB8.3.1.4	e) Remove and temporarily store grass sods	m2	500		R -
F.6	PSDB8.3.1.5	f) Remove and temporarily store all types of kerbs	m	400		R -
		EXCAVATIONS				
	8.3.2(a)	Excavate in all materials for trenches 400mm wide, backfill, compact, dispose of surplus / unsuitable material, levelling and cleaning for the following pipe diameters:				
F.7		a) 0 - 40mm diameter	m ³	900		R -
F.8		b) > 40mm - 50mm diameter	m ³	100		R -
	PSDB 8.3.2 (b)	Extra-over items (8.3.1 (a)) for				
F.9		i) Intermediate excavation	m ³	100		R -
F.10		ii) Hard rock excavation	m ³	50		R -
F.11	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (Provisional)	m ³	15		R -
	8.3.3	EXCAVATION ANCILLARIES				
	8.3.3.1	Make up deficiency in backfill material (Provisional)				
F.12		i) from other necessary excavations on site	m ³	100		R -
F.13	8.3.3.1(c)	ii) by importation from commercial sources or off-site sources selected by the Contractor	m ³	50		R -
	PSDB8.3.6	FINISHES				
F.14	PSDB8.3.6.1 (a)	a) Reinstatement of road crossings, including the supply and installation of hydrofill for reinstatement of road crossings, 300mm thick to JRA standard drawing	m ²	250		R -
F.15	PSDB8.3.6.1 (b)	b) Re-instate unreinforced concrete, complete	m ²	100		R -
F.16	PSDB8.3.6.1 (c)	c) Re-instate paving block units, complete	m ²	500		R -
F.17	PSDB8.3.6.1 (d)	d) Re-instate grass sods, complete	m ²	500		R -
F.18	PSDB8.3.6.1 (e)	e) Re-instate all types of kerbing, complete	m	400		R -
F.19	SABS1200DA	f) Topsoiling including trimming, filling, topsoiling and levelling of verges, removal of debris, rocks, etc. using stockpiled material.	m ²	500		R -
		ERF CONNECTIONS				
F.20		Illegal erf connection locating and removal	No.	1000		R -
		Erf connection provision and installation				
		1) Domestic erf connections				
		All erf connections HDPE				
F.21		a) Single short erf connections	No.	500		R -
F.22		b) Double short erf connections	No.	500		R -
F.23		c) Single long erf connections	No.	500		R -
F.24		d) Double long erf connections	No.	500		R -
TOTAL CARRIED FORWARD						R -

TOTAL BROUGHT FORWARD						R	-
	PS4.2.2	HORIZONTAL DRILLING					
		Supply and installation of pipe through horizontal drilling					
	C2.1.3.1	Using open trench construction					
F.25		a)20 mm diameter HDPE pipes	m	1000		R	-
F.26		b) 25 mm diameter HDPE pipes	m	100		R	-
F.27		c) 32 mm diameter HDPE pipes	m	100		R	-
F.28		c) 40 mm diameter HDPE pipes	m	100		R	-
F.29		Extra-over item for horizontal drilling.	m	100		R	-
		VALVES					
	PSLF8.2.10	Provision and installation of ball valves					
		a) Provision and installation of ball valves on existing and new erf connections. (Less than 500mm deep)					
F.30		1) 20 mm diameter ball valve	No.	2 700		R	-
F.31		2) 25 mm diameter ball valve	No.	2 000		R	-
F.32		3) 32mm diameter ball valve	No.	2 500		R	-
F.33		4) 40mm diameter ball valve	No.	1 500		R	-
		b) Provision and installation of ball valves on existing erf connections (More than 500mm deep)					
F.34		1) 20mm diameter ball valve	No.	590		R	-
F.35		2) 25 mm diameter ball valve	No.	550		R	-
F.36		3) 32mm diameter ball valve	No.	600		R	-
F.37		4) 40mm diameter ball valve	No.	600		R	-
	PSLF8.2.10.2	Extra-over item for ball valve installation for existing pipes other than HDPE.					
F.38		1) 20 mm diameter ball valve	No.	120		R	-
F.39		2) 25 mm diameter ball valve	No.	100		R	-
F.40		3) 32 mm diameter ball valve	No.	290		R	-
F.41		4) 40mm diameter ball valve	No.	450		R	-
F.42		Supply and install valve boxes for ball valves	No.	12 000		R	-
TOTAL CARRIED FORWARD TO SUMMARY						R	-

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
G.		SCHEDULE G: YARD CONNECTIONS				
	PS1.3 (B)	YARD CONNECTIONS				
	SABS 1200DB	EARTHWORKS: PIPE TRENCHES				
	8.3.1	SITE CLEARANCE				
G.1	8.3.1(a)	a) Remove topsoil to nominal depth of 150mm, stockpile and maintain.	m²	9 800		R -
G.2	PSDB8.3.1.1	b) Saw cut, remove and dispose of asphalt and stone crush base up to 200mm thickness	m²	500		R -
G.3	PSDB8.3.1.2	c) Saw cut, remove and dispose of unreinforced concrete of up to 150mm thickness	m²	700		R -
G.4	PSDB8.3.1.3	d) Remove and temporarily store paving blocks	m²	2 100		R -
G.5	PSDB8.3.1.4	e) Remove and temporarily store grass sods	m²	3 600		R -
G.6	PSDB8.3.1.5	f) Remove and temporarily store all types of kerbs	m	350		R -
	8.3.2	EXCAVATIONS				
		Excavate in all materials for trenches, backfill, compact, and dispose of surplus / unsuitable material for the following pipe diameters				
G.7		a) 0 - 25mm diameter	m	21 000		R -
G.8		b) >40mm diameter	m	2 400		R -
	PSDB 8.3.2(b)	Extra-over items (6.2) for				
G.9		i) Intermediate excavation	m³	560		R -
G.10		ii) Hard rock excavation	m³	280		R -
G.11	8.3.2(c)	Excavate and dispose of unsuitable material from trench bottom (provisional)	m³	100		R -
	8.3.3	EXCAVATION ANCILLARIES				
	8.3.3.1	Make up deficiency in backfill material (Provisional)				
G.12		i) from other necessary excavations on site	m³	630		R -
	PA 5.7.10	YARD CONNECTIONS				
	PA8.2.13	Supply and install yard connection complete for:				
		1) 20 mm HDPE class 12				
G.13		a) 0 - 10m long	No.	800		R -
G.14		b) 10 - 20m long	No.	900		R -
G.15		c) Exceeding 20m	No.	950		R -
		2) 25 mm HDPE class 12				
G.16		a) 0 - 10m long	No.	800		R -
G.17		b) 10 - 20m long	No.	900		R -
G.18		c) Exceeding 25mup to 40mm	No.	950		R -
G.19	PA8.2.14	Locate and expose meter bypass on existing yard connections	No.	350		R -
G.20	PA8.2.15	Locate and expose existing yard connections for assessment of condition	No.	500		R -
TOTAL CARRIED FORWARD						R -

JOHANNESBURG WATER

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SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
TOTAL BROUGHT FORWARD						R -
G.21	PA8.2.16	Locating and disconnecting existing yard connections in road reserve (On instruction of Client)	No.	500	R 450 000,00	R -
G.22	PA8.2.17	Locating and reinstatement of existing yard connection where disconnected as part of this Project (On instruction of Client)	No.	100		R -
G.23	PA8.2.12	Illegal yard connection locating and removal	No.	600		R -
	PA5.12	LEAK DETECTION				
G.24	PS6.4	Repair leaks (erf & yard connections)	Prov.Sum	1		
G.25	PA8.2.19	Leak free tests	No.	12 000		R -
		STANDPIPES(PROVISIONAL)				
G.26	PA8.2.9	Provision and installation of a standpipe(LOS2) complete as per applicable drawing.	No.	1		Rate Only
G.27	PA8.2.10	Installation of standpipe (LOS2) from temporary storage complete.	No.	1	Rate Only	
G.28	PA8.2.11	Standpipe (LOS2) removal and storage	No.	1	Rate Only	
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Qty	Rate	Amount
H.		SCHEDULE H: ON-PROPERTY PLUMBING RETROFITTING				
H.1	PA8.2.8	Preparation and delivery of notice to owner	No.	12 000		R -
H.2	PA 8.2.20	100% pre-intervention survey on customer properties	No.	12 000		R -
		ON-PROPERTY PLUMBING FITTINGS Remove and replace or refurbish existing and test plumbing fittings				
H.3	PA 8.2.22	Water closet (WC) pans	No.	4 000		R -
	PA 8.2.23	Water closet (WC) cistern and flushing mechanism				
H.4		a) 6-Litre plastic unit	No.	4 500		R -
H.5		b) 6-Litre porcelain unit	No.	3 500		R -
		Flushing unit only				
H.6		a) Plastic flushing unit	No.	2 500		R -
H.7		b) Ceramic flushing unit	No.	700		R -
	PA 8.2.24	Water closet (WC) cistern peripherals				
H.8		a) Cistern-pan connection (Flush pipe)	No.	5 000		R -
H.9		b) Flexible cistern tank supply connection 20X20mm pipe.	No.	3 000		R -
H.10		c) Rubber cone for flush pipe (black)	No.	5 000		R -
	PA 8.2.25	Draw-offs (taps) and stop taps (also known as stopcocks) 1) Bib taps				
H.11		i) Internal Taps	No.	5 000		R -
H.12		ii) External taps	No.	5 000		R -
		2) Pillar taps				
H.13		i) Internal Taps	No.	5 000		R -
H.14		ii) External taps	No.	2 000		R -
H.15		3) Mixers	No.	5 000		R -
H.16		4) Stoptaps	No.	5 000		R -
H.17		5) Rubber washers	No.	8 000		R -
	PA8.2.2	PIPEWORK Cut, remove and dispose of existing pipe section/s. Supply, handle, thread/couple, install and test new pipe sections for diameters 15-20mm for the following pipe;				
H.18		a) I.P.S threaded union system	m	5 500		R -
H.19		b) HDPE	m	900		R -
		Cut, remove and dispose of polytube pipe section/s. Supply, handle, thread/couple, install and test new pipe sections for diameters 15-20mm.	m	2 100		R -
		EXTRA-OVER ITEM FOR THE REMOVAL AND RE-STATEMENT OF SURFACES				
H.20		a) Remove, temporarily store and re-instate all types of tiles	m²	2 000		R -
H.21		b) Remove, temporarily store and re-instate all types of brickwork, and re-plaster	m²	1 000		R -
	TOTAL CARRIED FORWARD					R -

	TOTAL BROUGHT FORWARD					R	-
H.22	PA8.2.26	EXCAVATIONS					
		Excavate in all materials, backfill and compact for all diameter pipes	m³	100		R	-
		PLUMBING FITTINGS					
		Remove and dispose damaged item. Supply new, install, test and commission.					
		a) Equal tees for 0 -40mm diameter and the following materials					
H.23		i) I.P.S threaded union system	No.	2 500		R	-
H.24		ii) HDPE	No.	1 400		R	-
H.25		iii) Copper	No.	1 000		R	-
		b) Unequal tees for 0-40mm diameter and the following materials					
H.26		i) I.P.S threaded union system	No.	1 500		R	-
H.27		ii) HDPE	No.	2 000		R	-
H.28		iii) Copper	No.	1 500		R	-
		c) Reducing bush 0 to 40mm diameter for the following pipe materials:					
H.29		i) I.P.S threaded union system	No.	2 500		R	-
H.30		ii) HDPE	No.	2 000		R	-
H.31		iii) Copper	No.	1 500		R	-
		d) 90 degree Bends/Elbows					
H.32		i) I.P.S threaded union system	No.	300		R	-
H.33		ii) HDPE	No.	200		R	-
H.34		iii) Copper	No.	3 500		R	-
		ELECTRICAL EARTHING AND BONDING					
H.35		Electrical Earthing	No.	12 000		R	-
		Electrical Bonding					
H.36		a) U-Clamp	No/Set of 2	3 000		R	-
H.37		b) Galvanised stay wire/ copper earth peg	m	1 000		R	-
H.38		c) Copper earth peg	No.	3 000		R	-
	TOTAL CARRIED FORWARD TO SUMMARY					R	-

JOHANNESBURG WATER

CONTRACT NUMBER: JW14335

SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
I.		SCHEDULE I: CUSTOMER METER INSTALLATION				
I.1	PSLF 8.2.4.1.1	a) Supply of 15mm diameter STS Pre-payment water meter as per JW Metering Guidelines complete inclusive of couplings and Meter Box Unit (MBU)	No.	12 000		R -
I.2	PSLF 8.2.4.1.2	STS Customer Interface Unit (CIU-IOT) 434 MHz to 868 MHz (Supply and pairing of STS meter & Switching of meters from Conventional to Prepaid Mode)	No.	12 000		R -
I.3	PSLF 8.2.4.1.3	Annual Data Management Fee IOT Network Hosting for the contract duration	No.	12 000		R -
	PSLF 8.2.4.1.4	b) Installation of meter per stand	No.	12 000		R -
I.4	PSLF 8.2.4.1.5	Extra-over for pre-pay customer meter installation	No.	12 000		R -
		TRAINING				
I.5	PSLF 8.2.4.1.6	Training for Employer’s staff per session (20 people per group)	No.	10		R -
I.6	PSLF 8.2.4.1.7	Meter demonstration per stand by the Supplier’s technicians	No.	12 000		R -
		TECHNICAL SUPPORT				
I.7	PSLF 8.2.4.1.8.1	On- Site Support	Month	18		R -
I.8	PSLF 8.2.4.1.8.2	Stand-by- Site Support	Month	18		R -
I.9	PSLF 8.2.4.1.9	Switch of STS meters by drive by or by IOT	No	12 000		R -
TOTAL CARRIED FORWARD TO SUMMARY						R -

JOHANNESBURG WATER
CONTRACT NUMBER: JW14335
SUPPLY & INSTALLATION OF STS PREPAYMENT WATER METERS IN COSMO CITY – PHASE 2

Item No.	Payment Clause	Description	Unit	Billed Qty	Rate	Total Tendered Amounts
J.		SCHEDULE J: HEALTH AND SAFETY				
		SUPPLY OF ALL ITEMS OF PERSONAL PROTECTIVE CLOTHING/EQUIPMENT & ENSURE USE THEREOF FOR FULL COMPLIANCE				
J.1		Steel toe capped safety boots	No.	200		R -
J.2		Appropriate protective clothing	No.	200		R -
J.3		Gloves	No.	200		R -
J.4		Colour coded hardhats	No.	50		R -
J.5		Induction tags /cards	No.	200		R -
J.6		Luminous high visibility safety vests	No.	200		R -
J.7		Any other: Contractor to specify	No.	200		R -
		BARRICADING				
		Supply & install Proper Safety Nets, including removal upon completion to ensure full compliance to legislation				
J.8		Rigid type barricading	m	150		R -
J.9		Any other: Contractor to specify	Prov.Sum	1	R 150 000,00	
TOTAL CARRIED FORWARD TO SUMMARY						R -

Volume	1	2	3			
Part	<i>T1</i>	<i>T2</i>	<i>C1</i>	<i>C2</i>	C3	<i>C4</i>

Contract JW14335

Supply and Installation of STS Prepayment Water Meters in Cosmo City–Phase 2
Volume 1 –Section C3 – Scope of Work

Johannesburg Water (SOC) Ltd



CONTRACT JW14335

VOLUME 1

CONTRACT

PART 3:

SCOPE OF WORK

Volume	1	2	3
Part	T1	T2	C1

Contract JW14335

Supply and Installation of STS Prepayment Water Meters in Cosmo City–Phase 2
Volume 1–Contract Section C3 – Scope of Work
Scope of Work

C3 PREAMBLE TO SCOPE OF WORK

GENERAL

The Standard Specification for all associated civil work shall be the SANS 1200 – Standardized Specification for Civil Engineering Construction.

The Standardized Specifications applicable to this Contract are listed in the Project Specification.

These Specifications are not issued with this volume but are available at the Contractor's expense from: SA Bureau of Standards, Private Bag X191, Pretoria, 0001.

SCOPE

This Project Specification is set out in three portions:

Portion 1: PROJECT SPECIFICATION covers a general description of the project, the facilities available and the requirements to be met.

Portion 2: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS covers variations to the standardized specifications and particular specifications which are applicable to the contract.

Portion 3: PARTICULAR SPECIFICATIONS.

STATUS

Should any requirement of the Project Specification conflict with any requirement of the standardized or particular specifications, the requirements of the Project Specifications shall prevail.

Volume	1	2	3
Part	T1	T2	C1

Contract JW14335

Supply and Installation of STS Prepayment Water Meters in Cosmo City–Phase 2
Volume 1–Contract Section C3 – Scope of Work

ABBREVIATIONS AND DEFINITIONS

For the purpose of this Contract the following abbreviations shall have the associated meaning:

BEE	Black Economic Empowerment
BS	British Standard
CE	Civil Engineering
CESA	Shall mean the Consulting Engineers South African
CETA	Shall mean the Construction Education and Training Authority
CIDB	Construction Industry Development Board
CLO	Shall mean Community Liaison Officer
CoJ	City of Johannesburg
CONTRACT	
HDI and HDC	Shall mean historically disadvantage individuals and companies
CONTRACT AREA	shall mean the area within the boundary of the Project Area with suburbs listed under the contract scope
COP	Code of Practice for Work within the Road Reserve
ECSA	Engineering Council of South Africa
EDA	Enterprise Declaration Affidavit
ERF Connection	Shall mean a water connection from the secondary mains to property boundary
EMP	Environmental Management Plan
EPWP	Expanded Public Works Programme
Ext	Extension
GCC	General Conditions of Contract
GIS	Geographic Information System
JRA	Johannesburg Road Agency
JW	Johannesburg Water (SOC) Ltd
KL	Kilolitres
L	Litres
LOCAL	Shall mean within firstly the suburb/s
LOS	Level of Service
ML	Megalitres
Mod AASHTO	Modified American Association of State Highway and Transportation Officials
PROJECT AREA	Shall mean the area within the boundary of Soweto in Johannesburg, South Africa
PROPERTY	Shall mean a stand or sub-division thereof resulting in the separate issue of water and /or other service accounts to owner or occupier
PROPERTY CONNECTION	Shall mean a pipe which connects a property drain to a collector sewer or manhole or the meter to the secondary supply mains. In addition to straight pipes, it includes a junction on the collector sewer or saddle on the secondary supply mains
QAS	Shall mean quality assurance system
QCF	Quality Control Foreman
SABS	South African Bureau of Standards
SANS	South African National Standard
SERVICE PROVIDER	Shall mean either a consultant or contractor appointed to provide a particular service, i.e. investigations, design, labour provision and/or construction.
SMME	Shall mean small, medium and micro enterprises

Scope of Work SWa

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SOP
STAND

Standard Operating Procedure
Shall mean a demarked portion of property as per drawing/s provided by JW and shall exclude many stands designated for purposes other than human occupancy business trade etc

uPVC
WISA
VAT

Unplasticised Polyvinyl Chloride
Shall mean water institution of South Africa
Shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended

YARD CONNECTION

Shall mean on property connection on any point

For the purpose of this Contract the following shall have the associated meaning: a)

Unless inconsistent with the context, an expression which denotes:

- i) any gender includes the other genders;
- ii) a natural person includes a juristic person and vice versa; and
- iii) the singular includes the plural and vice versa.

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PD Employment and training of labour
4PE STS Meter Technical Information & Specification

Scope of Work SW.6

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PORTION 1: PROJECT SPECIFICATION

PS1 DESCRIPTION OF THE WORKS

PS1.1 EMPLOYER'S OBJECTIVES

The Employer's objectives, as a water and sanitation service provider for the City of Johannesburg (CoJ), are to address the following:

- a) reduce all water losses and Unaccounted for Water (UFW) by repairing water leaks on private properties, commercial properties and within the municipal network,
- b) create a service delivery environment that is conducive to the payment for services rendered
- c) create metered customers by installing prepayment meters to private properties and conventional water meters to commercial properties,
- d) use the implementation of infrastructure upgrading and construction projects to address social and economic deliverables by:
 - i) targeting local labour through the application of the EPWP principles in the contract, and
 - ii) targeting SMME (contractors and suppliers)

PS1.2 OVERVIEW OF THE WORKS

This contract comprises of the following Works:

- a) Supply and installation of Prepayment STS Water Meters.
- b) Supply and pairing of Customer Interface Units (CIUs)
- c) Repairs /replacement of leaking erf & yard connections
- d) Fixing of leaks on customer properties (Retrofitting)
- e) Reinstallments

The scope of works will be implemented within the following areas,

- Cosmo City ext. 2,
- Cosmo City ext. 4,
- Cosmo City ext. 6,
- Cosmo City ext. 11,
- Cosmo City ext. 15,
- Cosmo City ext. 20,
- Cosmo City ext. 21.
- Cosmo City ext. 22

PS1.3 EXTENT OF THE WORKS

The Works to be completed under this Contract consists of the following:

A. SECONDARY RETICULATION LEAK DETECTION AND REPAIR

Most of the existing secondary mains in Cosmo City have already been upgraded 'however any leaks detected during the implementation of the project will require replacement / repairs upon approval of the Engineer.

The works shall Include the detection and repair of such leaks on the existing secondary mains reticulation (in accordance to SANS 0306-1999, up to a maximum of 10,000 m. The activities shall typically Include:

- i) Leakage detection, trench excavations, determination and quantification of leak, provision of materials, Pipes sections, fittings (bends, valves, hydrants, etc.), and couplings (unless otherwise Instructed), bedding, laying, disinfection, and testing of connection Pipe, fittings and couplings, backfilling and compaction, and re-instatement of pre-intervention surfaces or top soiling, levelling and debris removal.
- ii) Leakage detection shall be conducted through approved methods such as;
 - a) Step testing,
 - b) Sounding,

Scope of Work SW.7

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- c) Leak noise correlation,
- d) Gas injection,
- e) Ground radar (subsurface Interface radar), and/ or Infrared.

B) ERF CONNECTION

The scope of work for this section entails the repair and replace erf connections that was identified during the pre-intervention inspection survey.

Activities shall typically include:

- Arrange access if required with stakeholders to commence with the works
- Locating and exposing leaking existing erf connection by hand excavation
- Arrange shutdown with all stakeholders
- Supply and installation of HDPE pipes, specials and valves and valve box
- Disconnecting existing erf connection
- Repair/Replacement of leaking erf connection fittings
- Material testing
- Re-connecting the existing connections to municipal supply mains
- Backfilling and compaction
- Reinstatement of the surface to restore top-soil to original state by levelling and removing debris
- Record data for as-built drawings.

C) YARD CONNECTION

The scope of work for this section entails the repair and replace yard connections that was identified during the pre-intervention inspection survey.

The works under this section entails

- i) The investigation of the existing yard connections constructed in the previous phases for defects, replacement or repair as necessary and making previously used mid-block erf connections redundant,
- ii) The installation of yard connections from existing and new erf connections located within the road reserves in the Block.

The Section activities shall typically include:

- Connection investigation
- trench excavations,
- provision and installation of pipes (HDPE, unless otherwise stated or instructed by the Engineer), stop tap/s, couplings, connection to existing on-property plumbing reticulation supply point, and
- backfilling and compaction, and
- re-instatement of pre-intervention surface finishing or top soiling, levelling and debris removal.

NOTA BENE:

- 1) Schedule E and F of the Works shall always, unless otherwise instructed by the Engineer, be separated with two valves (stop taps) on either side of a 2.5-meter (minimum) section of HDPE or Polypropylene pipe of similar diameter as pipes for Schedule E and F of the Works. This shall ensure undisturbed water supply while consumer meters are installed or maintained.

D) ON-PROPERTY PLUMBING FITTING LEAK REPAIRS AND RETRO-FITTING

The scope of work for this section entails the repair and retrofitting and limited to plumbing fittings and pipe work that contribute to potable water wastage or the improper connection of fittings into the existing waste water system of domestic households, as specified by the Employers Agent.

The section activities shall include:

- On property survey,
 - trench excavations □

Scope of Work SW.8

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- backfilling and compaction,
- repair of leaking or damaged:
 - i). pipes (HDPE or galvanised),
 - ii). taps (mostly biptaps),
 - iii). stop taps,
 - iv). cisterns, and
 - v). external toilet structural brickwork and concrete floor.
- retro fitting of:
 - i). pipes (HDPE or galvanised),
 - ii). taps (mostly biptaps),
 - iii). stop taps,
 - iv). toilet pans,
 - v). cisterns tanks, and
 - vi). cisterns flushing mechanism complete.
- re-instatement of pre-intervention surface finishing or top soiling, levelling and debris removal.

NOTA BENE: The Contractor shall conduct a pre-intervention property-to-property survey to assess the condition of on-property plumbing fittings for all occupied properties to receive or domestic customer meter on domestic properties, with the aim of assessing whether repair or retro-fitting is required, to quantifying and price such

requirement for intervention approval. The Contractor shall not commence with intervention without prior approval and written instruction from the Engineer. If the Contractor does commence without such approval the Employer shall not be liable for any cost incurred for such non-approved intervention. Once approval has been obtained from the Employer for on-property intervention

E) CUSTOMER METER INSTALLATION

The scope of work for this section entails the installation of STS prepayment water meters on existing domestic customer properties. Only water meters compliant with Johannesburg Water's specifications shall be installed at all user connections. The contractor shall provide STS water meters for installation which comply with the specifications in schedule H of this document.

The section activities shall typically include:

The contractor shall carry out the following activities during meter installation:

- Arrange access with all stakeholders to commence with the works;
- Supply STS meters and Customer Interface Units (CIUs) including fittings and couplings.
- Contractor to link the meters to the CIUs before issue to the customer
- Contractor to demonstrate installed meters to customers upon installation
- Locating and exposing yard connections by hand excavation;
- Arrange shutdown with all stakeholders;
- Connecting to yard connection;
- Leak free test and commissioning
- Backfilling and compaction;
- Re-instatement of the surface to restore top soil, pavements, surroundings to original state by levelling and removing debris;
- Contractor to provide record of evidence that installed Meter corresponds to correct stand number.
- Location of meter to be provided in DDMSS and WGS XY coordinates.
- Contractor to record meter details for client using the format provided by the client.
- Meters installed in open mode should be switched to prepaid mode only by drive by or IOT

NOTA BENE: Contractor shall supply all customer STS prepayment water meters and Customer Interface Units, including the immediate associate accessories (fittings & couplings, meter cover, and inline upstream strainer) and meter pamphlet. The Contractor to supply record of installation, device information, stand information using the format provided by the client.

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Contract JW14335

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Supply and Installation of STS Prepayment Water Meters in Cosmo City–Phase 2
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PS1.4 LOCATION OF THE WORKS

Cosmo City is located approximately 25 km Northwest of the CBD of Johannesburg within the following areas Cosmo City ext. 2, Cosmo City ext. 4, Cosmo City ext. 6, Cosmo City ext. 11, Cosmo City ext. 15, Cosmo City ext. 20, Cosmo City ext. 21, Cosmo City ext. 22 refer to the Employer's locality plan.

PS1.5 TEMPORARY WORKS

Temporary works shall:

- a) include the works required to locate, verify and protect existing services within the works;
- b) be such as to ensure no or limited interruption to vehicular and pedestrian traffic; and
- c) be such as to allow adequate water supply to all properties at all times.

Further the Contractor must ensure that no stockpiling of materials, plant. Excavated materials or any other construction related infrastructure shall be allowed in locations that may interfere with the operations of the Employer and the general public.

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PS2 ENGINEERING

PS2.1 EMPLOYER'S DESIGN

The Contractor undertakes to follow the construction of the works on the basis of the specifications and construction drawings laid out by the Employer.

PS2.2 DRAWINGS

PS2.2.1 Tender drawings

The tender drawings are attached to this Contract Document of this contract document and is based on current available information. Such drawing may be updated (based on actual site situation uncovered during execution of the works) and re-issued during the Contract Period as required.

LIST OF DRAWINGS	
DRAWING NUMBER	DESCRIPTION OF DRAWINGS
JW14335/GP/100	GENERAL LAYOUT DRAWING
JW14335/EXT.1/101.1	GENERAL LAYOUT-COSMO CITY EXT 1
JW14335/EXT.1/101.2	GENERAL LAYOUT-COSMO CITY EXT 1
JW14335/EXT.2/102	GENERAL LAYOUT-COSMO CITY EXT 2
JW14335/EXT.4/103	GENERAL LAYOUT-COSMO CITY EXT 4
JW14335/EXT.6/104	GENERAL LAYOUT-COSMO CITY EXT 6
JW14335/EXT.11/105	GENERAL LAYOUT-COSMO CITY EXT 11
JW14335/EXT.15/106	GENERAL LAYOUT-COSMO CITY EXT 15
JW14335/EXT.20/107	GENERAL LAYOUT-COSMO CITY EXT 20
JW14335/EXT.21/108	GENERAL LAYOUT-COSMO CITY EXT 21
JW14335/EXT.22/109	GENERAL LAYOUT-COSMO CITY EXT 22
JW100-DET05-W01	WATER ERF CONNECTIONS
JW100-DET10-W01	NAME BOARD

PS2.2.2 Construction drawings

Upon receiving the instruction to commence with the Works the Contractor shall receive three (3) sets of construction drawings, since the works on the project involves repairs or replacement of existing erf and yard connections and meter installations, as built drawings will not be applicable.

the later shall be:

- a) made available to the employer's agent or his duly authorised representative within 24-hour on request;

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Part	T1	T2	C1	C2	C3	C4

PS3 PROCUREMENT

PS3.1 PREFERENTIAL PROCUREMENT PROCEDURES

PS3.1.1 Requirements

The Contractor's attention is drawn to the following returnable schedules contained in Part T2:

- Empowerment and Preferential procurement (JW10);and
- Enterprise Declaration Affidavit (to be endorsed by a commissioner of oaths) (JW11) These schedules contain all requirements with regard to preferential procurement.

No additional points shall be awarded for targeted construction procurement as stated below.

PS3.1.2 Resource standards pertaining to targeted procurement

The following SANS Construction Procurement Standards are applicable:

- SANS 294 2004 : Construction procurement processes, methods and procedures
- SANS 1914-1 2002 : Targeted construction procurement – Part 1: Participation of targeted enterprises
- SANS 1914-2 2002 : Targeted construction procurement – Part 2: Participation of targeted partners in joint ventures
- SANS 1914-3 2002 : Targeted construction procurement – Part 3: Participation of targeted enterprises and targeted partners in joint ventures
- SANS 1914-4 2002 : Targeted construction procurement – Part 4: Participation of targeted enterprises and targeted labour (local resources)
- SANS 1914-5 2002 : Targeted construction procurement – Part 5: Participation of targeted labour
- SANS 1914-6 2002 : Targeted construction procurement – Part 6: Participation of targeted enterprises in concession contracts
- SANS 10396 2003 : Implementing preferential construction procurement policies using targeted procurement procedures
- SANS 10403 2003 : Formatting and compilation of construction procurement documents

The Contractor shall deliver the following deliverables as described in the October 2007 edition of the CIDB Specification for Social and Economic Deliverables in the Construction Contracts (SSED) (www.cidb.org.za) and the following associated specification data:

CLAUSE NUMBER	SPECIFICATION DATA
Deliverable C1: Provide business opportunities for targeted enterprises	
The specification data associated with SANS 1914–1 is as follows:	
2.7	The name of the Employer's Agent is Roginal Musonda (Johannesburg Water (SOC) Limited- New Services Division Department)
2.17	A targeted enterprise is: a) a qualified plumber or contractor with a CIDB contractor grading of up to 3CE acting in a capacity of a sub-contractor and b) a supplier of building materials or any other services (such as fuel, etc.) required for the execution of the contract. Such targeted enterprises must be located within the target area as defined in the Contract.
	The contract participation goal is 30% (minimum)
	The contract participation goal may only be achieved by: a) Subcontracting work to one or more targeted enterprises to perform commercially useful functions in the performance of the contract, and b) Purchasing materials and other services required for the execution of the contract from one or more targeted enterprises.

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	The targeted enterprise declaration and letters of undertakings are to be submitted 3 months of the commencement of the contract.
Deliverable C2: Procure subcontractors for defined portions of the contract in terms of the specified procedures	
4.5.1	Refer to PS3.2. below
4.5.2	Refer to PS3.2. below

PS3.2 SUBCONTRACTING

This tender is subject to the sub-contracting condition as described in item 3.11.1 of the Tendering Procedures and must be adhered to by the main contractor. It is also the obligation of the main contractor to impart skills to the subcontractor/s on the project during implementation. Although a minimum of 30% of the contract value has been identified for this project, the contractor may increase this percentage at their discretion.

An assessment to determine whether it is feasible to sub-contract 30% of the contract was conducted and the activities listed below were identified as activities that will be subcontracted on the project:

- Pipe excavations,
- Erf & yard connections,
- Retrofitting,
- Meter installations
- Reinstatements

The budget for the work to be sub-contracted in terms of Regulation 9 of the Preferential Procurement Policy Framework Act can be allowed for by the bidder under the following schedules:

- Preliminary and General (Bill of Quantities: Schedule A)
- Yard Connection Installation (Bill of Quantities: Schedule F)
- Customer Meter Installation (Bill of Quantities: Schedule H)
- On-Property Plumbing Fitting Leak Repair and Retro Fitting (Bill of Quantities: Schedule G)

NB: all sub-contractors appointed on this contract must comply with the Central Supplier Database (CSD) requirements, i.e they must be registered on the CSD.

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PS4 CONSTRUCTION

PS4.1 APPLICABLE STANDARDS

NATIONAL STANDARDS

The Standard Specifications for all associated civil work applicable to this contract shall be:

SANS 1200A	: GENERAL
SANS 1200 AB	: ENGINEER'S OFFICE
SANS 1200 C	: SITE CLEARANCE
SANS 1200 DA	: EARTHWORKS (small works)
SANS 1200 DB	: EARTHWORKS (pipe trenches)
SANS 1200 DM	: EARTHWORKS
SANS 1200 GA	: CONCRETE (small works)
SANS 1200 LB	: BEDDING (pipes)
SANS 1200 LC	: CABLE DUCTS
SANS 1200 LD	: SEWERS
SANS 1200 LE	: STORMWATER DRAINAGE
SANS 1200 M	: ROADS GENERAL
SANS 1200 ME	: SUBBASE
SANS 1200 MF	: BASE
SANS 1200 MG	:BITUMEN SURFACE TREATMENT
SANS 1200 MH	: ASPHALT BASE AND SURFACING
SANS 1200 MK	: KERBING AND CHANNELLING
SANS 1200 MM	: ANCILLARY ROADWORKS
SANS 0306	: LEAKAGE DETECTION
SANS 752	: FLOAT VALVE
SANS 1006	: BALL FLOAT
SANS 226	: BIBTAP
SANS 226	: STOP TAP
SANS 821	: CISTERN
SANS 497	: WATER CLOSET (WC) PAN
SANS 1509	: FLUSH VALVE FOR CISTERN
SANS 0252 (Part 1)	: WATER SUPPLY INSTALLATIONS FOR BUILDINGS
SANS 62-1 & SANS 719	: PIPES
SANS 1200 L	:MEDIUM PRESSURE PIPELINES

These Specifications are not issued with this volume but are available at the Contractor's expense from Standards South Africa:

Office Address:

1 Dr Lategan Road
Groenkloof
PRETORIA

Postal Address:

Private Bag X191
PRETORIA
0001

Telephone:

National: (012) 428 7911
International: + 27 12 428 7911
Email: sales@sabs.co.za

Telefax:

National: (012) 3441568
International: + 27 12 344 1568

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OTHER STANDARDS

Other Standard Specifications for applicable to this Contract shall be:

- a) City of Johannesburg Metropolitan Municipality, Public Road and Miscellaneous By-laws, Code of Practice for work in the road reserve (COP), Latest Version. **NOTA BENE:** *Should any requirement of this COP conflict with any requirement of the standardised or particular specifications the requirements of the COP shall prevail.* The COP is available at Johannesburg Roads Agency Offices, Wayleaves Department, Contact number: (011) 298 5000

PS4.2 PARTICULAR GENERIC SPECIFICATIONS

PS4.2.1 Particular specifications

The following generic particular specifications are included in portion 3 of this document:

- a) PA: Small diameter pipework within erven
- b) PD: Employment and training of labour

PS4.2.2 Horizontal directional drilling

This section shall cover the installation of pipes using horizontal directional drilling method, also referred to as directional boring or guided horizontal boring. It includes at a minimum requirements for design, materials and equipment used, pipe requirements and accessories.

During this drilling process a device shall mechanically be driven through the various types of soils, at a designed route and grade creating a pilot hole, followed by various activities to stabilize and enlarge the bore, before the new pipe is inserted.

PS4.2.2.1 Materials

All materials used for the construction of localised replacement or repair, shall where such mark has been awarded for a specific type of material, bear the SABS mark. Additionally all materials installed and supplied by the Contractor shall be guaranteed to be free from defects which may result from the manufacture, transportation, installation or any other process or factors. In this regard the Contractor shall take necessary precautions to ensure the integrity of materials is not compromised during handling or installation.

For pipes materials, jointing materials and corrosion protection, refer to SANS 1200L (Medium pressure pipelines) and SANS 1200LD (Sewers), as and if amended for this Contract.

PS4.2.2.2 Drilling equipment a)

Drilling equipment:

The drilling equipment shall include a hydraulically power system to rotate, push and pull hollow drill pipe into the ground at variable angles, while delivering a pressurized fluid mixture to guide the drill head. The equipment shall:

- i) have adequate capacity to execute the drilling and pipe installation forces. Have a hydraulic powered system that shall be:
- ii) self-sufficient with adequate pressure and volume to power required drilling operations be leak free, have a system which allows for the monitoring of the maximum pull-back pressure during pull-back operations and be securely anchored during pull-back operations □ have systems that:
 - have adequate safety features to protect operators and public, including guarding against electrocution; and
 - alarm system on the drilling equipment capable of detecting electrical current as the equipment approaches electric lines
- iii) have a steerable type drill head and have the required cutting surfaces and drilling fluid jets.
- iv) have mud motors that have sufficient power to turn the required drilling tools.

b) Guidance system:

The system shall:

- i) be capable of tracking at depths as required for the execution of the Works and in any soil conditions, inclusive of rock.
- ii) allow the operator to guide the drill head by providing immediate information at an interface.

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- iii) be of a proven type and shall ONLY be operated by experienced and trained personnel. The operator is to be aware of any geo-magnetic variance and shall take into account the influences thereof in the operation of the guidance system, if magnetic system is being used.

c) Drilling fluid system:

The system shall:

- i) be self-contained, closed and of a sufficient size to mix and deliver the drilling fluid composed of bentonite clay, potable water and appropriate additives (**NOTA BENE:** Additives are to have no adverse effects on the environment);
- ii) ensure that the mixture is adequately mixed and no clumping occurs; and
- iii) continually disturb and/or mix the drilling fluid during the drilling operations

d) Pipe rollers:

Rollers shall be of a sufficient size that shall fully support the weight of various types of specified pipes during pull-back operations. Sufficient numbers of rollers shall be provided in order to prevent any excess sagging of the pipe. Rollers are to be used as required to assist in pull-back operations and jointing of piping.

e) Hydraulic or pneumatic pipe rammers:

Hydraulic or pneumatic pipe rammers may only be used if necessary and with the prior authorization of the Engineer.

f) Other devices:

Other devices or pipe placement systems for providing horizontal thrust other than those defined above shall not be used unless approved by the Engineer prior to the commencement of the work. Consideration for approval shall be made for each individual case. The proposed device or system shall be evaluated before approval is granted, on its ability to complete the works in a satisfactory manner, maintaining the prescribed route and grade for this Contract.

PS4.2.2.3 Personnel

Drilling and pipe installation shall be performed only by experienced Contractor personnel specializing in directional drilling and who has at least 5 years experience, in particular, pilot hole steering and position monitoring.

PS4.2.2.4 Drilling and pipe installation

a) Notification:

The Contractor is required to notify the Engineer 48 hours in advance before commencement of ANY drilling work.

b) Route and grade control:

The Contractor shall:

- i) determine and confirm that the correct drilling length and equipment pull strength required for the type of soil encountered is utilized;
 - ii) provide and maintain instrumentation that accurately locates pilot holes;
 - iii) drill a pilot hole along the route as indicated on construction drawings or agreed by the Engineer to the tolerances of maximum 150mm over a 100mm length in the vertical direction and 300mm over a 100mm length in the horizontal direction, WHILST not affecting the proper conveyance to the actual fluids; iv) ensure continuous electronic monitoring of the drilling head location, horizontally and vertically.
- Additionally he shall provide position readings at a maximum intervals of 3m;
- v) obtain a final accuracy of within 25mm of the design pipe position; and
 - vi) provide the Engineer with measurements indicating the horizontal and vertical alignment at the completion of the pilot hole drilling, prior to commencing with the subsequent operations.

c) Drilling operation:

- i) The entire drill route shall be accurately surveyed and entry and exit pegs shall be placed.
- ii) Drilling fluids shall be:

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- adequately maintained in the drilled (bore) hole ensuring the stability of the surrounding soil and to reducing drag pipe.
- disposed of and other spoils in an appropriate location to be identified by the Contractor.
- minimized at locations other than the drill entry and exit points. ☐ removed where unintentionally spilled on surrounding surfaces.

iii) Drilling and reaming:

- The entry drill hole shall be angled so that the curvature of the pilot hole does not exceed allowable bending radius of the applicable pipe.
- In the event that forward motion, along the designed route and grade, of the operation is hindered or prohibited completely by any obstruction, the Engineer is to be notified. Upon the Engineer's approval, a second attempt at installation shall be made at an approved alternative location, or alternatively the section of difficulty shall be installed by means of conventional open trench excavations.
- Number of boring pits to be kept at a minimum, ideally located at new associated structure locations, unless otherwise instructed by the Engineer.
- Upon completion of the pilot hole, the Contractor shall ream the drilled (bore) hole to (at a minimum) 25% greater than the outside diameter of the pipe for straight pull sections. In the event that the route being curved or at a radius, the drilled (bore) hole is to be reamed (at a minimum) 50% greater than the diameter of the pipe. He may, at his discretion, pre-ream or ream and pull back the pipe in one operation if conditions allow for. The Contractor shall not attempt to ream at one time more than the drilling equipment and mud system are designed for.

iv) Installation of pipe: The Contractor shall:

- provide a swivel to the reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.
- after successfully reaming drilled (bore) hole to the required diameter, pull the pipe through the hole, with the swivel. Once pull-back operations have commenced, operations shall continue without interruption until pipe is completely pulled into drilled (bore) hole. During pull-back operations Contractor shall not apply more than the maximum safe pipe pull force at any time. In the event that pipe becomes stuck, Contractor shall notify Engineer. Engineer, Contractor, and/or the maintaining agency shall discuss options and then work shall proceed accordingly.
- protect pull section as it proceeds during pull back so that it moves freely and is not damaged.
- when connecting to adjacent pulled or non-pulled sections of pipe, allow pull section of pipe to extend past termination point, and make tie-ins the next day after pull-back of pipe.
- provide a test pit pipe installation to verify horizontal and vertical alignment, one test pit for every 150m along length of pipe route. The Engineer may order additional test pit for each test pit that reveals the pipe installation is not in compliance with the design, at no additional cost to the Employer.
- be required to make the necessary repairs at no additional cost to the Employer, if portions of the pipe is found not to comply with the Engineer's positioning requirements.

The annular space between the pipe and hole shall be filled with an approved material (Bentonite or similar approved) to support and stabilize the pipe. If pressure grouting is used, caution should be exercised to insure that excess grout pressure does not distort or collapse the pipe.

PS4.2.2.5 Record keeping

Contractor shall maintain a daily record of the drilling operations and a guidance system log with a copy submitted to the Engineer's authorized representative at completion of each boring section. Record drawing shall be certified by the Contractor, for accuracy.

PS4.3 ELECTRICAL EARTHING AND BONDING

All even where the galvanized pipes are replaced, as part of this Contract, shall be properly earthed and an earth leakage test shall be performed by the Contractor.

PS4.3.1 Electrical earthing

In South Africa in terms of SANS 10142 (2003 The Wiring of Premises: Part 1: Low-voltage installations, Edition 1.1), clause 6.13.2.2 all hot and cold water systems must be bonded together and also bonded to the earth continuity conductor system. It is thus imperative that during the installation of new HDPE yard connections,

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

where new secondary mains are installed in the road reserve or an existing steel yard connection is being replaced with new HDPE yard connections, that the Contractor re-instate disturbed electrical earthing as per Typical Detail 1, on drawing no J4092-W-P(G)-005 (Revision 0).

PS4.3.2 Electrical bonding

In South Africa in terms of SANS 10142 (2003 The Wiring of Premises: Part 1: Low-voltage installations, Edition 1.1), clause 6.13.2.2 all hot and cold water systems must be bonded together and also bonded to the earth continuity conductor system. It is thus imperative that during the installation of new HDPE yard connections, where new secondary mains are installed in the road reserve or an existing steel yard connection is being replaced with new HDPE yard connections, that the Contractor re-instate disturbed electrical bonding as per Typical Detail 2, on drawing no J4092-W-P(G)-005 (Revision 0).

PS4.3.3 Carrying out electrical earthing test

The Contractor shall be required to perform an electrical earthing test on individual households to ensure that the earthing of each property comply with the standard electrical regulations. If the test reveals that the earthing on any property is not done according to these regulations, the Contractor shall be obliged to inform, in writing, the owner of the property, as well as the Engineer.

PS4.3.4 Metric measurement

The metric system of weights and measures shall be used in all instances.

PS4.3.5 Site preparation

Prior to any Works commencement the Contractor shall photograph or video tape entire work area. One copy of which shall be given to the Engineer's authorized representative and one copy shall remain with Contractor for a period of 12 months following the issue of a Completion Certificate. This record shall be used to establish accountability for damages during the execution of the Contract.

No alterations beyond what is required for Works are to be made. Contractor shall confine all activities to designated work areas, to the absolute minimum required.

PS4.3.6 Watching and lighting

The Contractor shall in connection with the ordered Works provide and maintain at his own cost all lights, guards, fencing and watching when and where necessary or required for the protection of the Works and the materials and equipment utilized therefore or for the safety and convenience of the public or others.

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Part	T1	T2	C1	C2	C3	C4

PS4.4 CONSTRUCTION EQUIPMENT

The Contractor is required to provide all equipment necessary to carry out the works as required. No additional allowances other than those already specified in the schedule of quantities shall be allowed for with respect to equipment.

PS4.5 PLANT AND MATERIALS

PS4.5.1 Plant and materials supplied by the Employer

The Contractor shall provide all construction materials as per the specifications and no additional allowances other than those already specified in the schedule of quantities shall be allowed for with respect to plant and materials.

PS4.5.2 Materials, samples and shop drawings

Only materials that that have been tested and which have been approved by the SANS shall be used in the permanent Works.

PS4.6 EXISTING SERVICES

PS4.6.1 Treatment of existing services

The Contractor must liaise with all relevant local authorities to satisfy himself that all relevant services have been located. At the commencement of the contract, the Contractor must hand excavate a distance 0,5 metre on each side of the located service to expose it. The exposed service shall be identified and recorded on a drawing.

A copy of the drawing with all known services shall be submitted to the Engineer before construction can commence in any road reserve. Once the exposed service is identified and recorded the excavation must immediately be backfilled. Re-excavation by hand at construction stage will not be measured in addition to normal trench excavation.

The Contractor shall retain full responsibility for establishing the exact positions of the various services in advance of any construction work. No allowance for delays or disruption shall be entertained unless the Contractor complies fully with the provisions of this clause regarding the establishment of the exact positions of the various services in advance of any construction work.

PS4.6.2 Use of detection equipment for the location of underground services

The Contractor:

- is responsible to provide his own equipment in order to determine the location of existing services, and
- shall locate and expose existing services by hand.

PS4.6.3 Damage to existing services

The Contractor:

- must make provision for the possible existence of numerous services within and in close proximity to the work areas;
- shall take necessary steps to protect any existing services whatsoever against damage which may arise as a result his operations on site. Adequacy in terms of protection of existing services shall be at the discretion of the Engineer. The Contractor is to make good the protection of and any breakages to existing services;
- must inform the relevant service provider immediately (within 2 hours of the incident) such that procedures for the re-instatement of the service can be effected, should he damage or break an existing service (whether known or unknown);
- shall bear the cost of the repair of damages to any service, the possible existence of which could reasonably have been ascertained by him in good time.

Contractor shall contact the following persons should there be any disruption, damage or co-ordination required with the relevant services agencies:

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Part	T1	T2	C1	C2	C3	C4

□	EGOLI GAS	Joice / Selo	(011) 718 7133
□	ESKOM	Mr Christo Louw	(011) 711 2941
□	CITY POWER	Mr D Oliver	(011) 490 7000
□	CITY PARKS	Mr Mike Griffiths	(011) 407 3722
□	JOBURG WATER	Thula / Nkala	(011) 688 1400
□	JRA	Mr Theo Molamu	(011) 866 8697
□	RAND WATER	Mr Job Kubheka	(011) 682 0911/0433
□	NEOTEL	Mr Shane Cannon	(011) 359 1105
□	TELKOM	Mr L Ramolobela	(011) 309 9186
□	SASOL	Mr B van der Heuvel	(011) 865 8563
□	MTN	Shasha le Grange	(011) 912 3289
□	DFA / VODACOM	Ms Nadia Verhoog	(012) 345 7520

The Contractor's attention is drawn to Clause PSA 5.4.

PS4.7 SITE ESTABLISHMENT

PS4.7.1 General

In order to facilitate compliance with the General Conditions of Contract and Conditions of Contract the Contractor shall be required to set-up an individual construction camp. The size and functionality of the site camp shall be in relation to the individual extension. It is, however, expected that the Contractor would have made themselves aware on whether one or multiple site camps are required for the execution of the complete Contract Works.

The Contractor shall price accordingly and state so in their proposal. For the camp/s, the following shall apply:

- The Contractor shall make arrangements with the relevant authority for a suitable site to establish a construction camp, storage, works offices, workshop/s, kitchen, and shelters for security personnel.
- The Contractor shall note that only security personnel shall be permitted to remain in the campsite overnight.
- Ablution facilities shall be provided for men and women separately. One toilet per twenty workers shall be provided. Such facilities shall at all times be maintained in a clean and hygienic condition. Toilets shall be screened from public view and their use shall be enforced.
- Covered accommodation shall be provided for perishable or corrodible materials, fittings and the like and shall be adequate and suitable for their purpose. In the case of cement stores, they shall be well ventilated, weatherproof and waterproof with appropriate floors to keep the materials dry and freely aerated.
- All such accommodation shall be subject to the approval of the Engineer who shall have free access thereto at all times.
- Temporary buildings and fencing are to be safe, neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition for the duration of the Works.
- It shall be the Contractor's responsibility to ensure that they are in compliance with all relevant laws and regulations as well as tribal requirements.

PS4.7.2 Site facilities required for Engineer

a)Source of water supply: It will be the responsibility of the Contractor to make his own arrangements for the supply of water. Potable water is available in the area and the Contractor is to make the necessary arrangements for the provision of a metered point of supply with the Employer. The sum entered by the Contractor in the Bill of Quantities for provision of water shall be deemed to include full compensation for the procurement, transport, storage (where necessary), supply and application of water and for all the work necessary and incidental thereto for the various items of work where water is required for the purposes of the contract. The Employer does not guarantee the availability, sufficiency or continuity of any supply and no claims in this regard will be considered.

The Contractor is to be aware of the fact that this Contract is to be carried close to a built up environment and that, as such, excessive dust creation will be considered unacceptable by the local residents. The Contractor is to make provision for regular watering of the works in order to alleviate dust creation. During dry weather, or during periods when dust is created by the construction process, the Contractor will be required to water

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the works a minimum of twice a day, or as specified by the Engineer. This is a requirement over and above the normal requirement for watering of the works.

- a) Source of power supply: It will be the responsibility of the Contractor to make his own arrangements for the supply of electricity. The sum entered by the Contractor in the Bill of Quantities for the provision of power shall be deemed to include full compensation for the procurement and supply of powers to the works. The Employer does not guarantee the availability, sufficiency or continuity of any supply and no claims in this regard will be considered.
- b) Contractor's camp: A suitable site for the Contractors camp will be identified prior to commencement by the Employer. The Contractor is to make the necessary arrangements for the payment of services to the Municipality where applicable. The camp site shall be kept clean and tidy, and at the completion of the contract shall be restored to its original condition at the Contractor's own cost, and to the satisfaction of the Engineer. In order to facilitate compliance with the Conditions of Contract and the Specification, the Contractor may establish storage accommodation, works offices, workshops, messrooms, kitchens, shelters for watchmen, latrines, ablutions and the like in such positions and under such conditions as may be agreed by the Engineer and indicated in the Addendum to the EMP.

Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition.

The Contractor shall not make any excavation without written permission of the Engineer.

Covered accommodation for perishable or corrodible materials, fittings and the like shall be adequate and suitable for their purpose, and, particularly in the case of cement stores, shall be well ventilated, weatherproof and waterproof with floors raised off the ground, so as to keep the materials perfectly dry and freely aerated. All such accommodation shall be subject to the approval of the Engineer who shall have free access there at all times.

In addition to the above, the Contractor shall provide one toilet per 20 workmen. Portable toilet facilities shall be made available to workers of both male and female genders, the number provided to be in proportion to the ratio of the sexes. The toilets shall be located in the vicinity of the work site, shall be screened from public view and the use thereof shall be enforced. The Contractor shall, where applicable, make the necessary arrangements for the regular removal of night soil.

The Contractor may not house members of his permanent staff except for a security guard at the site and is to make the necessary arrangements for the transport of his staff members to and from the site on a daily basis. As the Contractor's Camp may be located in close proximity to a residential area, attention to noise levels, particularly after hours, will be essential.

- d) Site facilities required for Engineer and others: The requirements of the Engineer's Site Establishment are detailed in Project Specification PSA and PSAB.

The Contractor shall provide the following office facilities at his main site camp for the Engineer and others:

- One (1) office for the Engineers Representative, the JW ISD Team, (1) one office for the CLOs and one (1) to be shared by the Quality Control Foremen.
- Temporary office accommodation to suit his own requirements.
- Covered parking facilities for four (4) cars for the Engineers Representative, the JW ISD Team, ITQS staff

A telephone will not be required for the sole use of the Engineer. However, the Contractor shall be responsible for the payment of calls related to the Contract made by the Engineer's Representative, on his own mobile phone, during the course of the Contract. However, telefax and a Telkom ADSL line with modem facilities shall be provided on site and be available for the sole use of the Engineer at all times.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PS4.8 SITE USAGE

PS4.8.1 Work on private or state property

The Contractor is to confine his activities strictly to the working area defined as being within 10 m on either side of the pipelines, spoil sites and the direct access roads to these. He shall not encroach upon any roadway except with the prior approval of the Employer, in writing. The Contractor shall, throughout the Contract, take adequate precautions to protect all existing services from damage whether or not they have been pointed out to him.

Shallow sewer connections are to be found at the rear of the mid-block latrines. Particular care shall be exercised when excavating behind these structures. Underground electric cables are to be found on all erven at depths of between 75 and 1000 mm. Typically, these cables are at a distance of up to 1200 mm parallel to the erf boundaries and perpendicular to the common boundaries where they connect to the houses. Cables may also be encountered along the boundary behind the latrines. Particular care should be exercised when excavating in the vicinity of these cables.

The Contractor shall, as soon as is practically possible, inform the Engineer of any damages to services and shall not repair any such damage unless instructed to do so. The Contractor shall be responsible for making good, at his own cost and to the satisfaction of the Engineer, all damage caused by him to buildings and other improvements to properties.

Should the Contractor consider that damage to buildings and structures is unavoidable in the execution of any portion of the Works, he shall obtain the approval of the Engineer before proceeding with the work. Where damage is noticed before commencement of work on that erf, this should be reported to the Engineer in order to prevent a possible liability claim from the owner.

PS4.8.2 Site safety and precautions against nuisance

The Works are to be conducted in an urban area where high volumes of pedestrian and vehicular traffic may prevail. The watching, barricading, lighting and traffic control on site shall be carried out in strict compliance with these specifications. The Contractor shall ensure that all safety measures are strictly adhered to. The Contractor shall ensure that excavations on sidewalks within the road reserves or within the erven, do not at any time present a safety hazard to pedestrians. All excavations that remain open overnight are to be adequately protected.

The Contractor shall provide all safety materials and equipment necessary for barricading and safeguarding the excavations. The safety of staff and labour involved with the Works and the security of installations, plant and equipment is of major concern and need special attention during the execution of the Works.

Plant used on the Works shall be as efficiently silenced as possible and noisy operations will be permitted only between the hours of 07:00 and 17:00. Any work outside normal hours will be permitted only on the written authority of the Engineer. Wherever excavations or loading of material is liable to form dust, an effective method of spraying water over the excavated area and loaded material shall be instilled. Any rock or debris falling from trucks on the roads shall be removed immediately. Precautions shall be taken to prevent fouling of public roads or private surfaces. The Engineer may order the Contractor to broom off and clean roads or surfaces where debris may constitute a danger to the public or a nuisance to the owners.

PS4.8.3 Work on live water mains

Every effort will be made by the Council to furnish the Contractor with all available information regarding existing reticulation systems. Such information is given in good faith. Actual conditions in the field may, however, vary from the records upon which information is based. The Contractor must allow in his programme for delays when working on live mains and, as far as possible, such work should not be on the critical path of any programme and every effort must be made to have alternative work available.

PS4.8.4 Work outside normal working hours

In accordance with General Conditions of Contract Clause 5.8.1, certain work may only be done outside normal working hours. Such work shall be undertaken solely at the discretion of the Engineer who shall, from time to

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Part	T1	T2	C1	C2	C3	C4

time, issue advance orders in writing to the Contractor detailing the work to be undertaken. Work undertaken, as ordered, outside normal working hours shall be measured and paid for at the rates applicable to each and every item carried out as scheduled.

Normal working hours shall be defined as between 07:00 and 17:30 Mondays to Fridays and also 07:00 to 13:00 on Saturdays.

Where the Works are conducted within the road reserve of major arterial roads, the contractor's operations will be restricted to out-of-peak traffic periods (typically 09:00 to 15:30) or as determined by the Traffic Department. The Contractor shall co-ordinate his activities in such a manner that only minor operations that are nondisruptive to traffic are carried out during peak traffic periods. Should the Contractor choose to work outside normal working hours without having been ordered to do so by the Engineer, permission will not be unreasonably withheld but all additional costs arising out of such work shall be entirely to the Contractor's account.

PS4.9 PERMITS AND WAYLEAVES

The Contractor will be required to obtain permits and wayleaves from all the applicable service providers who may have services in the vicinity of the Works. These include the following: Rand Water, Sasol Gas, Egoli Gas, Telkom, Eskom, City Power, Johannesburg Roads Agency, Johannesburg City Parks, Johannesburg Water, Neotel and the like.

The Employer will assist the Contractor to obtain clearance from the various authorities with services that are likely to be affected by the Contract. It is, however, the Contractor's responsibility to obtain final permit and wayleave approval according to applicable procedures and specifications. In the case of Johannesburg Roads Agency, this will be as per the City of Johannesburg Code of Practice for Work within the Road Reserve. Further, a processing fee of R400,00 per wayleave per project per suburb will be payable to cover the cost of processing and approval of the Johannesburg Roads Agency wayleave applications.

Permits and way leave associated costs shall be deemed to have been included in the scheduled rates for excavation and location of existing services under the relevant section of SANS 1200A.

PS4.10 INSPECTION OF ADJOINING PROPERTIES

The Contractor shall carry out inspections and evidence collection, as he deems appropriate, of properties adjoining the works to ensure that, in the event of a claim arising from any of the owners of the adjoining properties for damage to property and the like, the Contractor has substantial evidence to support or refute such claims. The Contractor accepts full liability and responsibility for damage that he causes to adjoining properties as well as any costs involved in refuting or processing of such claims.

PS4.11 WATER, SANITATION AND ELECTRICITY FOR CONSTRUCTION PURPOSES

PS4.11.1 Water

The Contractor shall make his own arrangements with the Employer to obtain a potable water metered standpipe connection for which at least 14 days notice shall be given. The size of the connection provided will be as specified in the Water and Sanitation By-laws.

The Contractor may only draw water from fire hydrants through means of a legal, Employer owned, potable water metered standpipe. Failure to use such Employer owned potable water metered standpipes, or using illegal, non- the Employer owned equipment for purposes of drawing water from fire hydrants, will result in the Contractor having to pay an account to the Employer, for an amount determined by the Employer.

The potable water metered standpipe(s) must be made available to the Employer's water inspectors for purposes of reading and inspection, and failure to do so, will result in the immediate withdrawal of such potable water metered standpipe(s). The onus is on the Contractor to return such potable water metered standpipe(s) if they are found to be defective (not registering consumption). Failure to do so will result in an account being levied, payable to and determined by the Employer. Claims for delays caused where standpipe(s) are withdrawn and/or replaced will not be considered. The current water tariffs applicable to the Contract are

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available from the Employer. Compensation for these costs will be made under the rates and no separate compensation will be made.

PS4.11.2 Sanitation

The Contractor shall provide, maintain, move to positions as required and finally remove proper sanitary accommodation. Sanitary accommodation shall be properly screened and its use strictly enforced. The Contractor shall comply with the Johannesburg Water (SOC) Ltd's Sanitation General By-Laws Section 19(1) and 19(3). The Contractor shall bear all costs associated with the provision of sanitary accommodation. Compensation for these costs will be made under the rates and no separate compensation will be made.

PS4.11.3 Power supply

Power shall not necessarily be available at individual sites in the area of the Contract and the Contractor shall make their own arrangements with the relevant authority for the supply of power. The Contractor shall bear all costs associated with the provision of power. Compensation for these costs will be made under the rates and no separate compensation will be made.

PS4.12 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS SURVEY CONTROL AND SETTING OUT OF THE WORKS

The Contractor is required to verify the accuracy of all drawings and levels provided by the Engineer prior to commencing with any construction activities.

Where the Works require that alterations, additions, extensions and / or modifications be carried out to existing works or facilities, these shall be carried out strictly in accordance with the requirements of the relevant authorities.

PS4.13 SURVEY CONTROL AND SETTING OUT OF THE WORKS

The Contractor will be held responsible for the maintenance of all the cadastral beacons and bench mark pegs on the site that were recorded as existing at the commencement of construction, and for the replacement of any of these pegs that are found to be missing or disturbed upon the completion of the contract. A completion certificate will only be issued after the Contractor has submitted to the Engineer a certificate from a registered land surveyor stating that all pegs are in their correct position.

The Contractor shall, prior to the ordering of pipes or fittings, set out the works in accordance with the drawings / site instructions. The positions of chambers, pipe bends, road crossings and connections to existing mains shall be clearly marked. The Contractor shall protect and maintain all pegs and markings throughout the Contract. The Contractor shall record the setting out of the works in an approved format and order all materials accordingly. Where discrepancies are identified, these shall be raised with the Engineer and a ruling sought, prior to ordering of material related to the discrepancy.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS5 MANAGEMENT OF THE WORKS

PS5.1 APPLICABLE SANS 1921 STANDARDS

The portion(s) of the scope of work is considered routine construction work. It is therefore expected that the Contractor shall make use of the services of small and micro enterprises for portion(s) of the works. These include site clearance, service location and protection, small scale excavation and small-scale concrete construction and precast concrete construction of chambers.

The Standards applicable to this Contract shall be:

SANS 1921-1	2004	Part 1:	General engineering and construction works
SANS 1921-2	2004	Part 2:	Accommodation of traffic on public roads occupied by the contractor
SANS 1921-5	2004	Part 5:	Earthworks activities which are to be performed by hand

PS5.2 PLANNING AND PROGRAMMING

PS5.2.1 Construction roll-out and programming

The Contractor shall provide the Engineer with a method statement indicating the manner and sequence in which he intends to construct the works, for each work area, with the program. In the method statement the Contractor must address at least the following items:

- sequence of the works for the relevant works area;
- target dates for the tasks identified in sequence of the works for the relevant works area;
- materials requirements;
- construction Plant to be used;
- services affecting construction; and
- any factors and approvals that could affect construction progress after commencement.

The method statement must be approved by the Engineer before commencement of construction. In order to minimize the impact on traffic, pedestrians and business the Contractor will be required to segment the works in such a manner that no portion of the works is more than one day ahead of the following position. These segments of the works shall be clearly defined in the Contractor's method statement for each work area.

If, during the progress of the work, the quantities of work performed per month fall below those shown on the program or if the sequence of operations is altered, or if the program is deviated from in any other way, the Contractor shall, within one week after being notified by the Engineer, submit a revised program.

If the program is to be revised by reason of the Contractor falling behind his program, he shall produce a revised program showing the modifications to the original program necessary to ensure completion of the Works or any part thereof within the time for completion. Any proposal to increase the rate of work must be accompanied by positive steps to increase production by providing more labour and plant on the Site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the program or revised program shall be sufficient reason for the Employer to take steps as provided for in the GCC.

The approval by the Engineer of any program shall have no contractual significance other than that the Engineer would be satisfied if the work is carried out in accordance to such program and that the Contractor undertakes to carry out the work in accordance with the program. It shall not limit the right of the Engineer to instruct the Contractor to vary the program should circumstances make this necessary.

PS5.2.2 Work plan

Seven days prior to commencing with any part of the Works, the Contractor shall submit to the Engineer, for review and approval, a work plan detailing the procedure and schedule to be used to execute such works, detailing and substantiating any deviation from the originally proposed approach. Further, the work plan shall include a:

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- a) time frame;
- b) description of all equipment and tools to be used;
- c) list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable);
- d) list of sub-contractors, schedule of work activity;
- e) safety plan (clearly highlighting any potentially hazardous substances to be used); f) traffic control plan (if applicable);
- g) an environmental protection plan; and
- h) contingency plans for possible problems.

The approval given by the Engineer shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as prescribed under this Contract

Work plan shall be comprehensive, realistic and based on actual working conditions. Further it shall form the various sub-sections of the overall Contract programme and plan

NOTA BENE: No works shall be allowed to commence without an approved work plan.

PS5.2.3 Planning

The Contractor shall ensure that he:

- a) is well informed with regard to the Employer's overall maintenance programme and avail resources as required to efficiently complete this Contract; and
- b) delivers goods and services timeously to meet the Employer's prevalent performance standards and where applicable to not unnecessarily delay any other contractors, service providers and suppliers.

PS5.2.4 Programming

In order to ensure a clear understanding, at the inception of the Contract, of the programming and documentation format requirements, the Contractor shall appoint a project programmer/ planner for liaison during the Contract. The Contractor shall for the Contract Period provide and regularly update (maximum monthly) a Contract Programme.

The programme shall at minimum contain: a)

Time Scale (minimum):

- i) Days, where the period does not exceed three months. Weeks, where the project period exceeds three months.
- ii) Months, where the period does not exceed one year.
- iii) Years, where the project period exceeds one year.
- b) Tasks: Where phases or stages are anticipated, this shall be the highest level of division and all tasks related to the successful accomplishment of that phase of the area shall be grouped. Resources allocation and task dependency shall be indicated.
- c) Start and Finish Dates: All tasks shall have specific start and finish dates.
- d) Critical Path: All tasks forming the programme line that will establish any delays in the overall Contract Period shall be clearly indicated and an indication of their sensitivity characteristics shall be provided.
- e) Progress Tracking: The Contractor shall be required to periodically indicate progress per task graphically and on a percentage basis.
- f) Non-working Time: All South African public holidays, weekends and the local traditional annual builder's break shall be incorporated in the programme..

No deviation from the approved sequence of construction shall be accepted without prior written approval.

The programme shall not be in the form of a bar chart only, but shall show clearly the anticipated quantities of work to be performed each month, together with the manner in which the listed plant is to be used, as well as the anticipated earnings for the various sections of work.

NOTA BENE: A Contract programme shall be submitted to the Employer's Agent no later than 28 days after Contract Commencement Date.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The Contractor shall provide the Engineer with a method statement indicating the manner and sequence in which he intends to construct the works, for each work area, with the program. In the method statement the Contractor must address at least the following items:

- sequence of the works for the relevant works area;
- target dates for the tasks identified in sequence of the works for the relevant works area; c) materials requirements;
- construction Plant to be used;
- services affecting construction; and
- any factors that could affect construction progress after commencement.

The method statement must be approved by the Engineer before commencement of construction. In order to minimize the impact on traffic, pedestrians and business the Contractor will be required to segment the works in such a manner that no portion of the works is more than one day ahead of the following position. These segments of the works shall be clearly defined in the Contractor's method statement for each work area.

If, during the progress of the work, the quantities of work performed per month fall below those shown on the program or if the sequence of operations is altered, or if the program is deviated from in any other way, the Contractor shall, within one week after being notified by the Engineer, submit a revised program.

If the program is to be revised by reason of the Contractor falling behind his program, he shall produce a revised program showing the modifications to the original program necessary to ensure completion of the Works or any part thereof within the time for completion. Any proposal to increase the rate of work must be accompanied by positive steps to increase production by providing more labour and plant on the Site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the program or revised program shall be sufficient reason for the Employer to take steps as provided for in the GCC.

The approval by the Engineer of any program shall have no contractual significance other than that the Engineer would be satisfied if the work is carried out in accordance to such program and that the Contractor undertakes to carry out the work in accordance with the program. It shall not limit the right of the Engineer to instruct the Contractor to vary the program should circumstances make this necessary.

PS5.3 Sequence of the Works

Notwithstanding any changes that the Employer's Agent deems necessary the sequences should include the following:

- Mobilisation, project planning and control and communications to stakeholders
- Supply and delivery of meters, arrangement of testing by JW prior to installation
- Investigation of erf & yard connections
- Investigation of gate valves
- Exposing existing services and driveways
- Hand excavation for erf & yard connections and meter installations
- Supply, bedding and laying of pipes
- Provision and installation of gate valves and chambers
- Backfilling including compaction
- Trenchless installations
- Reinstatement of paved and other areas where affected
- Leak free testing of the installation
- Clearing of the site including removal of spoil
- Site hand over

PS5.4 Software Application for Programming

The construction programme shall be completed in Microsoft® Project Standard 2007 or compatible software. The construction programme and updated versions thereof shall be made electronically available to the Engineer.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS5.5 Methods and Procedures

The methods and procedures for the execution of the works shall be in accordance with the standard specifications and the variations and additions thereto.

PS5.6 Quality Plans and Control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the specifications and drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced personnel, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the works at all times.

The cost of supervision and process control will be deemed to be included in the rates tendered for the related items of work.

On completion and submission of every part of the Works to the Engineer for examination, the Contractor shall furnish the Engineer with proof of quality in the form of a data pack containing measurements and levels to indicate compliance with the scope of work. Notwithstanding anything contained in this document, any tests that may have been carried out, any consent that may have been given, either directly or implied, and anything that may be construed to the contrary, the Contractor shall remain fully and solely accountable for the Works and for compliance with the specifications and the drawings.

The Contractor shall afford inspectors from the Local Authority reasonable access to all parts of the site. The Engineer in the presence of representatives of the Local Authority will generally undertake testing of the works. Accordingly the Contractor shall notify the Engineer at least 24 hours in advance as to when the various sections of work will be available for testing. The Engineer may require the Contractor to submit a weekly schedule of times, based on his programme, that he envisages work to be available for testing.

The tendered rates shall include the cost of all activities and tests that may be required in ensuring proper completion and commissioning of the Works, and no additional claims shall be entertained in this respect. This includes the supply of all necessary equipment required for such and / or for inspections by the Engineer and any other relevant authority. Any defect in the Works shall be corrected to the satisfaction of the Engineer.

PS5.7 ACCOMMODATION OF TRAFFIC ON PUBLIC ROADS OCCUPIED BY THE CONTRACTOR

PS5.7.1 Accommodation of traffic

The Contractor shall ensure the safe accommodation of traffic at all areas where the work may impact traffic and shall provide all delineators, watching, lighting, signs and barricades required by the road authorities, and in accordance with the South African Road Traffic Signs Manual.

PS5.7.1.1 Road safety equipment

The Contractor shall provide each work unit or team with:

- an amber-flashing beacon, which shall comply with and be operated in accordance with any governing road vehicle lighting regulations or similar.
- appropriate sized and quantity of road signs, including delineators and cones which shall be displayed at the works area in accordance with the South African Road Traffic Signs Manual, Chapter 13.
- bright coloured overalls, fluorescent over-jackets and belts for each team member for use at all working times during the day or night.

PS5.7.1.2 Traffic Control

The Contractor shall prepare a traffic quality control plan and submit it to the Engineer seven (7) days before commencing with construction on any portion of the Works.

- A traffic control plan shall include detailed diagrams showing the location of all traffic control devices and the length of time for all lane closures, as well as location of any flaggers, as necessary.
- One lane of traffic in each direction must be maintained at all times and local streets may only be closed with prior approval of the Engineer.
- A written method of handling traffic for each different phase of the project shall be submitted and include both vehicular and pedestrian traffic.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- d) The name and number of the Contractor representatives responsible for traffic control shall be made available to solve traffic problems at each job site location.

For the complete temporary closure of any road affected by the proposed works, the Contractor shall make allowance in his price, in addition to the minimum requirements specified under clause PS5.7.1.2, for the following safety equipment:

- Two traffic information signs minimum per road informing the public of the road closure, *i.e. 'ROAD CLOSED' signs displayed on both sides of the closed.*
- Two traffic warning signs minimum per road informing the public that the road has been closed, *i.e. 'NOENTRY' signs displayed on both sides of the closed road.*
- One temporary traffic sign indicating a dead-end to the public trying to exit from by means of the closed road.
- The provision of traffic barriers on either side of the close street for preventing the public from accessing the closed road at the construction site, *i.e. plastic 'new jersey' barriers positioned without any spacing and to totally close of the road from kerb to kerb edge.*
- Two traffic information signs minimum per road indicating an alternative route or a detour, *i.e. 'DETOUR by ALLAN ROAD' signs displayed at visible positions.*
- A combination of delineators shall be placed at 5m intervals along the works, as required, to successfully completing the works site isolation.

PS5.7.2 Access to properties

Adequate access shall at all times be maintained to public and private properties unless otherwise arranged and approved. Details of the proposed means of access shall be submitted before any such access is restricted. Claims arising from impeded access shall be the responsibility of the Contractor.

At least 7 days before commencing any work affecting access to a property, the Engineer and the occupier/owner of each such property shall be notified of the Contractor's intention to commence work, the date of commencement, expected duration and arrangements which will be made regarding maintenance of access.

PS5.7.3 Bridges across dangerous excavations

The Contractor shall provide a structurally sound and safe bridge with side rails across dangerous excavations crossing sidewalks to allow pedestrians safe access to such sidewalk. Associated costs for the provision of pedestrian access to sidewalks shall be deemed to have been included under the various excavations or combined activity rates and/or prices in the pricing schedules.

PS5.8 OTHER CONTRACTORS ON SITE

There may be other contractors working within the same area. As such, the Contractor is required to make adequate allowances for such possibilities. No claims with respect to works being carried out by other contractors shall be entertained by the Employer.

PS5.9 TESTING, COMPLETION, COMMISSIONING AND CORRECTION OF DEFECTS

The onus is on the Contractor to produce goods and services which shall conform in quality and in accuracy of detail to the requirements hereinafter specified. The Contractor must clearly understand that it is not the duty of the Engineer or his representative to act as foreman or surveyor on the Works.

The Contractor shall, at his own expense, provide experienced engineers, foremen and surveyors together with all transport, instruments and equipment for supervising, checking and controlling the work.

The act of passing any completed work or accepting materials or goods for payment by the Engineer shall not be construed as signifying approval or acceptance thereof. Failure on the part of the Engineer to reject any defective work or material or goods shall not in any way relieve the Contractor of his obligations under the Contract, nor prevent later rejection when such work or material is discovered.

The Contractor shall, when submitting any work to the Engineer for examination, satisfy himself by testing, measurement and otherwise as may be necessary that the work does in fact meet with the requirements of the Specifications. This information shall be submitted with the Contractor's request for examination and the

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Engineer shall be authorised to decide on the number and type of tests, measurements, etc. required to enable him to judge the quality of the work. The submission of this information shall in no way diminish the authority of the Engineer to conduct such tests as he may consider necessary in order to determine the quality of the work performed by the Contractor, nor shall he be bound to take account of the Contractor's tests, measurements, etc. should he consider these to be either incorrect or not representative.

Quality control and completion tests shall be in accordance with the relevant standard and amended specifications and additional specifications.

PS5.10 RECORDING OF WEATHER AND ABNORMAL RAINFALL

If during the time for completion of the Works, or any extension thereof, should abnormal rainfall or wet conditions occur, then an extension of time in accordance with Clause 5.12.1 to 5.12.3 of the General Conditions of Contract shall be granted by the Employer, calculated on the critical path method. It shall be applied as follows:

A delay caused by inclement weather conditions will be regarded as a delay if, in the opinion of the Engineer, all progress on an item or items of work on the critical part of the working programme of the Contractor has been brought to halt. Delays on working days only (based on a five day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of **10 (ten)** working days caused by normal rainy weather, for which he will not receive any extension of time.

Daily records of rainfall and activities within the critical parts affected shall be kept by the Contractor and signed by the Engineer's representative on the site. For this, accurate rain gauging shall be taken at a suitable point on the site, and the Contractor shall, at his own expense, take all necessary precautions to ensure that unauthorised persons do not interfere with the rain gauges. Failure to produce signed copies of the above records on a daily basis to the Engineer's representative on the site after the event having occurred will be deemed to be in breach of this Clause and will not be admissible for purposes of seeking an extension of time.

The Contractor shall be permitted to take his own rainfall measurements on site subject to the Engineer's approval, but access to the measuring gauge(s) shall be under the Engineer's control.

The Contractor is to provide and install all the necessary equipment for accurately measuring the rainfall as well as to provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost.

The values of Nn Rn, x and y for use in Clause 5.12.2.2 of the Special Conditions of Contract shall be as follows:

Source of Information	:	Weather Bureau, Department of Environment
Rainfall Station	:	Goudkoppies O475736A2, Lat 2616, Long 2755
Period	:	1990 to 1999

Month	Nn	Rn	Month	Nn	Rn
January	10,9	116,1	July	0,2	0,7
February	6,8	84,9	August	0,9	3,9
March	8,5	112,8	September	2,7	16,5
April	2,8	24,9	October	7,2	92,5
May	1,5	18,3	November	9,8	88,0
June	0,5	1,6	December	11,6	130,9

Average Annual Rainfall 691,0 x
= 20 mm y = 10 mm

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS5.11 FORMAT OF COMMUNICATIONS

All communication shall be in writing and any verbal agreements shall only be binding once confirmed and agreed to in writing. Communication via, registered post, email or facsimile is acceptable.

The Contractor shall report on a fortnightly basis for the duration of the Contract to the Engineer on the progress of the Works, the local resource participation and other Project related matters in a prescribed format (3 hard copies and a soft copy).

Progress reporting shall contain tables and graphics (acrobat PDF format) and shall include, but not be limited to;

- a) erf and yard connection installation
 - Works commencement date
 - Works completion date
 - Variations (detail, time and cost implications)
 - Site agent, foremen, quality manager and safety officer details
 - SMMEs allocated
 - Number of connections and length of pipework installed
 - number of fittings (saddles, stop valves, etc)
 - system testing performed and approved
 - number and length of exiting connections replaced
 - Quality certification
 - Final cost and time implication
 - Take-over certificate requested (date)
 - Record information submitted (person and date)
 - Record information approved (person and date)
 - Take-over certificate issued (date)
- b) on-property intervention
 - Projected amount
 - Works commencement date
 - Works completion date
 - Variations (detail, time and cost implications)
 - Site agent, foremen, quality manager and safety officer details
 - SMMEs allocated
 - Intervention details (number, type and cost of plumbing fittings)
 - system testing performed and approved
 - old fittings removed from site
 - Quality certification
 - Take-over certificate requested (date)
 - record information submitted (person and date)
 - record information approved (person and date)
 - Take-over certificate issued (date)
- c) meter installations (distinguishing between the various types)
 - Projected amount
 - Works commencement date
 - Works completion date
 - Variations (detail, time and cost implications)
 - Site agent, foremen, quality manager and safety officer details
 - SMMEs allocated
 - number of meters, type, size and location of installations
 - yard connection material type and condition
 - number of additional fittings (adaptors, etc)
 - system testing performed and approved □ number of exiting meters retrieved □ first and second 'leak-free' test performed
 - quality certification

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- Final cost and time implication
- Take-over certificate requested (date)
- record information submitted (person and date)
- record information approved (person and date)
- Take-over certificate issued (date)

Local resources reporting shall include but not be limited to; a)
Number (labourers, SMMEs and suppliers),

b) Labour:

- Process of recruitment, selection and appointment
- Name and surname
- Gender and age
- Contact details (address, telephone numbers and ward number)
- Contract signed
- Duration of appointment
 - i. Commencement date
- Termination date
- Activity performed
- Classification (Skilled, semi-skilled or unskilled (labourer))
- Time or task rate
- Allocated Supervisor/foreman
- Health and Safety induction undergone
- Training provided
 - i. Trainer details
 - ii. Type of training
 - iii. Duration of training
 - iv. Cost of training
- Performance rating (good, fair, poor)
 - i. For training
 - ii. Work execution
 - iii. Health and safety awareness
- Additional training or supervision to be provided
- Monthly and cumulative payments

c) SMMEs

- Process of recruitment, selection and appointment
- Company name
- Company contact details (address, telephone numbers and ward number)
- Company registration (also VAT and TAX)
- Company age (months or years)
- Type of company
- Company size (number of permanent employees)
- Name and surname of owner
- Owner contact details (address and telephone numbers and ward number)
- Gender, age and PDI status
- Contract signed
- Duration of appointment
 - i. Commencement date
 - ii. Termination date
- Resources provided (labour and/or plant and/or materials)
- Activity performed
- Classification
- Time or task rate
- Allocated Contractor Supervisor/foreman
- Health and Safety induction undergone
- Training provided
 - i. Trainer details
 - ii. Type of training

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- iii. Duration of training
 - iv. Cost of training
- Performance rating (good, fair, poor)
 - i. For training
 - ii. Work execution
 - iii. Health and safety awareness
- Additional training or supervision to be provided
- Monthly and cumulative payments
- d) Suppliers
 - Process of recruitment, selection and appointment
 - Company name
 - Company contact details (address, telephone numbers and ward number)
 - Company registration (also VAT and TAX)
 - Company age (months or years)
 - Type of company
 - Company size (number of permanent employees)
 - Name and surname of owner
 - Owner contact details (address and telephone numbers and ward number)
 - Gender, age and PDI status
 - Contract signed
 - Duration of appointment
 - i. Commencement date
 - ii. Termination date
 - Resources provided (plant and/or materials)
 - Activity performed
 - Allocated liaison
 - Health and Safety induction undergone
 - Performance rating (good, fair, poor)
 - Monthly and cumulative payments

The report format may be amended from time to time by the Engineer. However the initial format shall be finalised by the Engineer in association with the Contractor.

PS5.12 KEY PERSONNEL

The Contractor is to provide the Curriculum Vitae's of key personnel to be employed on the project as well as the person's position and responsibilities within the project team. The Contractor shall provide the following minimum key staff:

- a) Contract manager;
- b) Site Agent;
- c) Quality Manager/Auditor/Controller;
- d) Health and Safety Officer/s;
- e) Environmental Officer
- f) Foremen; and
- g) Qualified plumbers.

The Contractor shall ensure that at least one sufficiently experienced horizontal directional drilling supervisor is on-site full time while horizontal directional drilling operations are performed.

PS5.13 MANAGEMENT MEETINGS

Fortnightly site meetings shall be arranged and facilitated by the Engineer. Senior Contractor management staff attendance shall be compulsory.

The Contractor shall be required to provide reporting with regard to project progress, resources (human, plant and equipment), community issues, environmental and health and safety aspects.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS5.14 FORMS FOR CONTRACT ADMINISTRATION

The Contractor shall maintain a file which shall contain project information related to project progress, resources (human, plant and equipment), community issues, environmental, health and safety aspects, penalties imposed, claims lodged and outcomes, disputes and resolutions, payment and variations.

PS5.15 DAILY RECORDS

The Contractor shall keep daily site records as required by the Employer or his representative and as specified herein. Daily records shall include, labour, plant, materials, rainfall, environmental issues, health and safety issues, daily diary and the like. Such records are the property of the Employer and shall be made available to the Employer or his representative within 24 hours from being requested to do so.

PS5.16 BONDS AND GUARANTEES

In addition to GCC Clause 6.2.1, the Contractor shall provide the Form of Guarantee for the due and punctual fulfillment and completion of all the Contractor's obligations under the Contract. No extension of time of the Contract Period of Performance or any variation of the Contract nor the determination of the Contract by the Employer in terms of Clause 10 hereof shall in any way impair or diminish or terminate any liability to the Employer under and by virtue of such Guarantee.

Should the Contractor, when notified of the acceptance of his offer, fail to provide an approved Guarantee within the stated period, then the Employer may, at his sole discretion:

- (a) Grant the Contractor a further reasonable period in which to provide the bond; or
- (b) Withdraw his acceptance of the tender in which case the Contract shall be deemed to be void, but without prejudice to the Employer's rights to recover whatever damages he may have suffered by virtue of the Contractor's failure to fulfil his obligations.

PS5.17 PAYMENT CERTIFICATES

Payment certificates shall be submitted to the Engineer, in the format required, for approval and final submission to the Employer on a monthly basis.

PS5.18 INSURANCES PROVIDED BY THE EMPLOYER

The Employer shall provide all insurance as required in terms of the General Conditions of Contract.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS6 FEATURES REQUIRING SPECIAL ATTENTION

PS6.1 PROJECT PARTICIPATION STRUCTURE

PS6.1.1 Project participant organizational structure

The project team consists of the following parties indicated below.

PS6.1.1.1 Johannesburg Water Project Manager:

A representative of Johannesburg Water who looks after the interests of JW by establishing a clear project goal and objective, monitoring the progress of the project, ensuring that all work is done according to the scope of works and is also responsible for the successful execution of the project.

PS6.1.1.2 JW Site Staff

The JW Engineers Representative and Assistant Engineers Representatives who work closely with the contractor and supervise the construction, ensuring that the contractor complies with the specified quality of work and informing the Consultant Project Engineer / Manager of the progress of the works.

PS6.1.1.3 CONTRACTOR

Responsible for the coordination of the project as well as providing all the necessary labour, equipment and tools. The contractor is also responsible for implementing the works within the specified time frame, budget, quality and adhering to all statutory requirements.

PS6.1.1.4 SMME's

Small, Medium and Micro-sized Enterprises may be subcontracted to execute portions of the work.

PS6.1.1.5 Contractor's Staff

Provide the contractor with support in terms of site supervision, monitoring, administration and ensuring that safety regulations are in place where necessary and strictly adhered to.

PS6.1.1.6 Facilitators

Facilitators sourced and employed from the community for a period of time during the implementation stage of the works.

PS6.1.1.7 COMMUNICATION ISD MANAGER

Information Systems Development

PS6.1.1.8 Community Liaison Officer (CLO)

A representative linking the community to other role players in the project to ensure that communication between contractor, the local community and appointed subcontractor runs smoothly.

PS6.1.1.9 PRE-PAYMENT MANAGER

Provides supervision to the operations facilitator and ensures that the prepayment system functions as required by JW.

PS6.1.1.10 Operations Foreman

Carries out a variety of duties to maintain the efficient and safe use of the prepayment water meters prescribed by JW.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS6.1.1.11 DEPOT MANAGER

Johannesburg Water Depot Manager to provide assistance to the implementation team with regards to shut down arrangements, connecting to the existing system and sharing general knowledge about the system.

PS6.1.1.12 QCF

Quality Control Foremen working with the Employers Agent that is Semiskilled Plumber to independently evaluate work conducted by the Main Contractor & SMME's

PS6.1.1.13 SECURITY

The Contractor shall be responsible to provide security on site(s):

- a) as he deems necessary. the employer shall not be held responsible for any loss or damage(s) suffered by the contractor, and his plant and, equipment, materials, subcontractors or employees as a result of a security incident of any nature.
- b) which have been identified, by the Employer's Agent and/or Employer, as potential high risk areas requiring security during site visits for the duration of the contract. The Contractor shall arrange that the security meet with the Employer's Agent and/or Employer representative at a convenient and safe location and thereafter escort to the necessary areas.

PS6.2 PRACTICAL COMPLETION

As per GCC Clause 5.5.1 Practical Completion of the Works shall be deemed to have been reached when the Contractor and the Engineer has formally signed-off for:

- a) **Work done on private properties.** Work done on each erven must be taken over by the customer. The intervened extension must be over 90% complete. This must include the installation of prepayment meters for all intervened stands. The Engineer will sign for Practical Completion when the Contractor has complied with the conditions stated above.
- b) **Work done on the road-reserve.** Work done by the Contractor on the road reserve must be 100% complete, tested and accepted by the Depot before the Engineer can sign for Practical Completion.

PS6.3 PROVISION AND GENERAL ITEMS FOR THE SMMES

Reasonable storage facilities shall be made available for use by the community SMMEs for the safe keeping of their tools, equipment and materials. Such facilities shall be limited to a minimum of a 3 X 3 meter lockable container, with allowance for easy separation of various SMMEs items and shall have shelves and hooks for storage of items. The Contractor shall determine the required size, shelving and hooks based on their calculation of the required number of SMMEs.

Allowance shall be made for the provision and maintenance of small tools and equipment required by the SMMEs to successfully complete their allocated work in the allocated time frames. This shall include wheel barrows, picks, shovels, racks, brooms, screw drivers, hammers, pliers and trowels.

Ablution and latrine facilities and water Supplies, electric power and communications, access and plant shall form part of the Contractor's Fixed and Time related cost.

PS6.4 PROVISION OF A STANDBY PLUMBING TEAM (SPT)

The Contractor shall make available off-or on-site for the entire Contract Area a plumber team on a standby basis to intervene on already intervened on-properties only and only outside normal working hours (evening, weekends and public holidays). At no time shall a customer;

- a) Be left without water, for longer than three consecutive hours, as a result for poor intervention during and outside normal working hours.
- b) Wait longer than one hour for the SPT.

The Employer wishes not to inconvenience its customers during the Project Period and therefore the cost of this provision shall be for the Contractor's account as the contract shall remain responsible for all intervention executed on this Project by Them.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Newly developed leaks on erf and yard connections shall be repaired at rates tendered in Schedule F.24 of the Schedule of Quantities. Alternatively poor workmanship and defective materials shall be at the cost of the Contractor and no payment shall be due under this item.

The Contractor shall notify the Engineer or its duly Authorised Representative/s of any such callouts' and shall indicate all properties within the Contract areas affected in a report to be designed in collaboration with the Engineer or its duly Authorised Representatives.

PS6.5 QUALITY CONTROL FOREMEN (QCF)

The Contractor shall be required to employ Quality Control Foremen as part of this Contract at a ratio of 1 QCF per 6 plumbers. The QCF shall be:

- Employed from the project target areas.
- Under the supervision of and report to the Engineer and or his duly authorized site representative.
- Remunerated through the Contract.

PS6.5.1 Guidelines for the recruitment of a Quality Control Foremen

The QCFs employed by the Contractor shall have the following minimum qualities:-

- Must be a qualified plumber, civil engineering technician or quantity surveyor with water reticulation experience.
- A strong personality
- Able to be firm and decisive
- Able to facilitate disputes resolution
- Able to keep minutes and records in a proper and orderly manner
- Objective (no favoritism),
- A fair person,
- Able to adhere to deadlines.

PS6.5.2 QCFs responsibilities to the Contract

The QCF/s shall be to carry out quality control checks for the following:

- Assist with the on-property pre-intervention surveys to:
 - Locate and record all plumbing fixtures
 - Compile scope and cost of on-property intervention per residential stand
- Assist with the installations of pre-payment water meters
- Assist with inspection of the completed on-property intervention and pre-payment water meter installations

PS6.6 ON-PROPERTY INTERVENTION SURVEY AND REPAIRS

The Contractor shall:

- obtain express consent from private property owners or occupiers within the project area to carry out on-property plumbing pre-intervention surveys.
- carry out pre-intervention plumbing surveys on all stands where consent has been granted and capture and document the results of such surveys in a Management Information System compiled by the contractor in an excel format.
- enter into a written agreement or contract with individual private property owners or occupiers to carry out on-property plumbing repairs on their behalf based on the results of pre-intervention surveys. The Employer will remunerate the Contractor for this work as per Schedule G of the schedule of quantities.
- Carry out the agreed on-property plumbing repairs and / or retro-fitting. The period between the pre-intervention plumbing survey and completion of plumbing repairs and / or retro-fitting (including installing prepayment meter).shall not exceed five (5) working days.

NOTA BENE:

- No indiscriminate pre-intervention surveys shall be permitted without corresponding on-property repairs and / or retro-fitting.
- The Contractor shall not execute any on-property intervention without this consent.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PS6.6.1 ON PROPERTY PLUMBING CUSTOMER INFORMATION

The Contractor shall compile a list of all domestic erven, to enable the Employer to issue consumers with notification, at least three (3) months prior to the installation of meters, repairing or retrofitting of defunct on-property fittings. It is important that this activity be complied with, as such consumers will be financially responsible for all water use that is recorded on the meter, and irrespective if such usage is not legitimate consumption.

PS6.7 SKILLED PLUMBERS

The Contractor should note that this Contract shall be executed simultaneously at any given time with other related Infrastructure Upgrading and Rehabilitation Projects (IURP's), thus there may be insufficient local plumbing resources available in Cosmo City for their requirements. The Contractor shall prove by providing a list and credentials, indicating that he has a minimum of 10 accredited plumbers available to be allocated to this Contract. The Contractor shall also provide a programme for the:

- a) Training of selected local labour as plumbers, and
- b) Provision of practical experience on this Contract.

PS6.8 NEGOTIATIONS WITH PROPERTY OCCUPANTS

The Contractor shall make all necessary arrangements with property owners regarding access to the site etc., and also regarding reinstatements of ground surfaces (grass, concrete, paving blocks, asphalt and vegetation), damage to land and property, etc.

Take over shall not be deemed to certify completion if any ground surface/s requiring reinstatement on any property is not completed by the Contractor. The Contractor may be requested to obtain a letter for the owner of each property concerned to the effect that he is satisfied with the reinstated condition of his property.

PS6.9 SECURITY

The Contractor shall be responsible to provide security on site(s) for the duration of the contract:

- a) for his plant, equipment, materials, subcontractors or employees. The Employer shall not be held responsible for any loss or damage(s) suffered by the Contractor as a result of a security incident of any nature.
- b) To escort the Engineer and / or Employer during site visits. The Contractor shall arrange that the security meet with the Engineer and/or Employer representative at a convenient and safe location and thereafter escort to the necessary areas.

PS6.10 OPERATION OF VALVES

Only employees of the Employer are permitted to operate primary and secondary water mains valves.

PS6.11 WORK OUTSIDE NORMAL WORKING HOURS

The Contractor is permitted to work outside of normal working hours only upon obtaining written permission from the Engineer. It is anticipated that all switch-over work (tying new infrastructure into existing) will be completed during hours that will not affect the supply of water to affected communities.

PS6.12 COMMUNITY LIAISON AND COMMUNITY RELATIONS

In all dealings with the community and workers employed from within the community, the Contractor shall take due cognisance of the character, culture and circumstances of the community involved and shall at all times use his best endeavors to avoid the development of disputes and to foster a spirit of co-operation and harmony towards the project. The Contractor shall at all times, keep the Engineer fully informed on all matters affecting the community. The Contractor shall keep the community fully informed of progress and planned interruptions.

PS6.12.1 Community Liaison Officer

The contractor shall make use of the Community Liaison Officer (CLO), where scheduled, which is to be appointed on behalf of Johannesburg Water and who shall be responsible for liaison between the Contractor/Engineer and the local community. The CLO will be responsible for keeping the community informed on the progress of the project and conversely keeping the Contractor and Engineer informed on relevant community affairs and grievances.

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A Project Committee shall be established and shall meet on a regular basis to consider, discuss and resolve progress, relevant community matters, welfare of workers, expenditure, requirements of the Contractor and other matters that relate to the project. The committee, which may be chaired by a representative of Johannesburg Water shall consist of representatives of:

- Johannesburg Water
- The Engineer
- The Contractor
- The Community Liaison Officers (representing the labour employed) □ The ISD consultant appointed by JW.

PS6.13 NOTICES AND WARNING TO CONSUMERS

The Contractor shall ensure he maintains service (water and/or sanitation) provision at all times whilst executing the works where:

- a) The maximum amount of time of no service shall be 8 hours for any property. Any service disruption longer than 8 hours shall be temporary bypassed by methodologies approved by the Engineer or his duly authorized representative.
- b) A Public Notification Program shall be implemented, requiring at minimum that the Contractor shall deliver written notices to each domestic and non-domestic customer affected by the works, 48 hours before commencement of the works, including providing: i) a summary of work to be completed; ii) the time and duration of service interruption; and
- a) a local telephone number to contact the Contractor for inquiries or complaints. All complaints received shall be addressed and resolved within the standard Employer response times and a summary of such complaints and associated actions shall be presented to the Engineer or his duly authorized representatives on a monthly basis.

PS6.14 CONTINUITY OF SERVICE SUPPLY TO CUSTOMERS

The activities of the Contractor shall not unreasonably interfere with the service supply to customers and be executed outside the agreed and notice time frames.

Where the Contractor cannot reasonably re-establish services within times agreed and notice time frames he shall proceed to contact the affected customer and make alternative arrangements that shall be acceptable to the customer and the Engineer.

The associated costs of any customer claim arising from a lack of service provision due to the Contractor's negligence or his disregard for the Employer's SOP or his disregard for the conditions of this Contract, whilst executing activities as per this Contract, shall be solely for his account. The Employer shall have the right to make equivalent monetary deductions from monies owed to the Contractor or from his Guarantee under this Contract and any other active contract(s) with the Employer.

PS6.15 REINSTATEMENT OF ASPHALT BY JRA

The JRA shall be given first preference to provide and execute all the reinstatement of asphalt at places where excavation is within the roadway. The Contractor shall make other adequate arrangements where the JRA:

- a) indicated that it will not, for whatever reason, be able to perform such asphalt resurfacing; and
- b) is the cause of delays, where in particular the Contractor shall note that the Employer shall not be liable of any additional extension of time related cost obligations to the Contractor, as he shall be deemed have agreed adequate conditions with the JRA and allowed delays on the part of the Employer.

PS6.16 LABOUR INTENSIVE CONSTRUCTION

The portions of the Works to be constructed utilising labour intensive construction methods only, shall include but not be limited to:

- a) clearing and grubbing of the Site;
- b) excavation up to 1m deep (in soft and intermediate materials where ordered by the Engineer), spreading, processing and compaction;
- c) backfilling of all pipe trenches to depths up to 1 m;
- d) mixing, transporting, placing and finishing of small concrete works;
- e) spoiling of all materials within distances not exceeding 20 m;
- f) transportation of earthworks for distances not exceeding 20 m;

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- g) removal of oversized materials;
- h) Installation of all pipes with diameters smaller than 200 mm;
- i) All on site retrofitting;
- j) All erf and yard connections;
- k) cleaning and tidying up of the Site.

PS6.16.1 Provision of a temporary workforce

The Contractor shall have regard for the stipulation laid down for all Labour Intensive projects that he employs labour from the local community through the Labour Desk that has been established for this purpose. The relevant Ward Councillor(s) and/or Community Liason Officer(s) shall be consulted during the process of appointing local labour. The Labour Desk shall assist in identifying available local labour and, where available, semi-skilled labour as well as local sub-contractors. The Labour Desk shall also assist and advise regarding conditions of employment, minimum wages, disputes and disciplinary procedures. The workforce that is employed on site shall consist of local residents where applicable, except for approved key staff, in accordance with Clause 21 of the General Conditions of Contract.

The Occupational Health and Safety Act must be adhered to with reference to the safety of any employee irrespective of whether such employee is employed by the Contractor or by a local sub-contractor. Furthermore, a contract of employment must be signed between the Contractor and each of his employees and sub-contractors and between such sub-contractors, and each of the sub-contractor's employees with clear reference to the following conditions:

- a) The minimum agreed wage rate per hour or per day;
- b) The task rate for all labour intensive activities shall be R 95,00/task;
- c) The agreed pay rate per unit of production where applicable;
- d) UIF and WCA payments where applicable;
- e) Minimum working hours per day;
- f) Start and end times of a daily shift;
- g) Lunch break times;
- h) Company policy regarding the following:
 - Rain time
 - No work no pay, sick, absent
 - Disciplinary and grievance policies □ Method of payment □ Workers' clothing and safety equipment to be issued.

PS6.16.2 Restriction of the utilisation of personnel in the permanently employed construction personnel of the contractor

The Contractor shall limit the utilization on the Contract, of his permanently employed construction personnel to that of key personnel only, as defined below, and shall execute and complete the Works utilizing a Temporary Workforce of local residents, employed directly by the Contractor and/or by his SMMEs or specialist sub-contractors. "Key personnel" means all; a) Contractor managers,

- b) site agents,
- c) site clerks,
- d) survey technicians,
- e) quantity surveyors,
- f) trainers,
- g) supervisors,
- h) foremen,
- i) skilled plant operators and the like, and
- j) all other personnel in the permanent employ of the Contractor or his SMMEs or specialist subcontractors who possess special skills, and/or who play key roles within the Contractor's or his SubContractor's operations.

PS6.17 ADDITIONAL PROTECTION ON ROAD WAYS

In the case of construction work across bridgeways and motorways, barricades consisting of 22,5 mm x 40 mm deals painted white, suitable supported and firmly fixed to heavy supports shall be provided at least 15 m in advance of the work. Further road-closed signs shall be prominently displayed. Where only a portion of

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roadway is closed, delineators, drums or upended pipes (painted white with red stripes) shall be placed along the traffic side at distances no more than twelve (12) metres apart.

In the case of construction or work across or within residential streets or collector roads; road closure signs, delineators (or drums or upended pipes (painted white with red stripes)) shall be placed across the street or road at distances no more than one-and-a-half (1.5) metres apart or plastic barricades. No road or street shall be closed without prior attainment of written approval, by the Contractor, from the local Roads Authority. The Contractor shall maintain such traffic accommodation on a daily basis for the duration of the Contract Period, and shall be solely responsible for any damages claimed as a result of the lack of such maintenance.

No separate payment shall be made for this item and applicable section's tender rates shall be considered to include for traffic accommodation and road protection.

PS6.18 POLITICAL AND COMMUNITY UNREST

The Contractor shall make allowance for all costs which might arise due to the interruption of works and / or standing time in terms of political and / or community unrest on the Contract. Only if a situation give rise to more than four (4) hours per day, for normal working hours only, of non-working progress on the Contract Area will such situation be considered an unrest situation payable to the Contractor under this item. The contractor shall notify the Client or its duly Authorized Representative/s of any unrest situation and shall indicate all active Contract sites affected.

PS6.19 INDEMNITY CERTIFICATE

The Contractor must, on completion of the Works, obtain certificates from all authorities concerned stating that they are satisfied with the condition of all borrow pits, detours, access roads and spoil material on their properties. The certificates must be handed over to the Engineer before the maintenance period starts. The certificates will not exempt the Contractor from any obligations concerning the backfill of trenches, finishing off of borrow pits, access roads, detours etc. This work must still be carried out to the satisfaction of both the Employer and the Engineer.

PS6.20 RETURN OF MATERIALS

All old valves, valve covers, meter boxes and all pipework that can be reused shall be returned by the Contractor to the Water Depot or as directed by the Engineer. The Contractor shall obtain the signature of the Superintendent acknowledging receipt of materials returned. The Contractor shall determine the condition of the materials.

PS6.21 SUSPENSION OF CERTAIN ACTIVITIES

Notwithstanding what is stated in the General Conditions of Contract, the Engineer may suspend all retrofitting activities should the Contractor have commenced work on 75 erven per extension more than the number which has been completed and tested. Alternatively, the Engineer may suspend activities should the Contractor fail to complete isolated erven within extensions without satisfactory reasons. Such suspension shall remain in force until such time that the pipework on no more than 25 erven remains incomplete and untested or the isolated erven within extensions are completed and tested. All costs out of any suspension order as described above, shall be borne by the Contractor.

PS6.22 PROTECTION AGAINST WATER AND STORMS

The Contractor shall be responsible for the full adequate protection of the works against damage due to storms, rain, floods, stormwater, subsoil water and seepage from whatever source. The Contractor shall take over the site where the works has to be executed at the beginning of the Contract Period and the full risk and cost of dealing with all water shall be borne by the Contractor.

The Contractor shall also provide all necessary pipe work, pumps and other appliances necessary for adequate dewatering of all excavations and shall maintain these in good condition and provide adequate standby equipment to ensure that no disruption of work will ensue as a result of possible breakdown of equipment.

PS6.23 NOTICES, SIGNS AND BARRICADES

The Contractor shall erect all barricades during the construction period to safeguard the Works and protect members of the public from any risk associated with the partly completed facilities. The position and contents

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of all such barricades must be approved by the Engineer. All barricades, notices and signs shall be provided, erected, maintained and finally removed at the cost of the Contractor.

PS6.24 FINISHING-OFF AND TRIMMING

After completion of the works included under the Contract, the entire construction site (road reserves, private properties etc) shall be finally cleared of all excess earth, stones, boulders, debris and other waste material. All finishing, trimming and clearing previously done in terms of the requirements of the various sections of these Specifications shall be finally completed to the satisfaction of the Engineer. All materials resulting from the finishing and trimming operations shall be disposed of in designated spoil areas on site. The Contractor shall make his own arrangements with owners of properties on which such materials are to be deposited. Disposal shall be carried out in a neat and orderly manner and finished to a smooth level. The Contractor shall allow in his rates for all costs associated with finishing-off and trimming as no separate payment will be made for this operation.

PS6.25 INFORMATION SUPPLIED BY THE ENGINEER

Certain information included in this document or supplied separately are presented in good faith and no guarantees can be given regarding the accuracy or representativeness thereof. The Employer can therefore not accept any responsibility for the accuracy of any information or for any damage resulting from the fact that the information later proved wrong or not representative. If the Contractor chooses to rely on the information he does so at his own risk.

PS6.26 PROTECTION OF FURNITURE AND EQUIPMENT

Most of the work to be done inside houses and will be carried out in places where there is furniture and other equipment. The Contractor shall be responsible for moving the furniture and equipment in order to provide working space for his personnel. The programme shall be drawn up in such a manner as to keep the movement of furniture and equipment to the very minimum and the Contractor shall be solely responsible for any damage to furniture and equipment.

PS6.27 SITE MAINTENANCE

During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner, and shall keep the Site free from debris and obstructions.

PS6.28 IDENTITY CARD FOR ACCESS TO PROPERTIES

The Contractor shall provide identity cards for all his staff and the staff of all his subcontractors. The identity card must have the following:

- Staff name;
- Identity number;
- Photo;
- Contractor's company logo or name; and ☐ JW logo.

The staff must carry their identity cards at all times while on site and no staff must access any property without showing his identity card.

PS6.29 CHANGES IN THE WORKS SCOPE

No increase or decrease (irrespective of the varying percentage) in the quantity of any work schedule, where such increase or decrease is not as a result of a Variation Order given under the Variation Clause but is the result of the quantities exceeding or being less than those stated in the tender schedule of quantities shall be deemed to be a variation to which this clause applies and no variation order shall be issued. However, the budget limitations shall be noted. Additionally the Employer reserves the right to vary the scheduled works scope without any tender rates re-negotiations on the part of the Contractor, irrespective of the percentage of variance, as follows for any work included in the Contract: a) Increase or decrease the quantity thereof.

a) Omit portion thereof.

b) Quality change thereof.

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Contract JW14335
Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase
2

Volume 1 – Contract
Section C3 – Scope of Work

PS6.30 GENERAL TECHNICAL REQUIREMENTS

- a) Site camp: The site camp must be inside Cosmo City boundaries.
- b) Pre - intervention survey: A comprehensive stand survey must be conducted to finalise the retro fitting scope of work and associated cost for each stand.
- c) Leak detection survey and repairs: This activity was retained in the Bill with a moderate quantity.
Informal settlements: The upgrading of informal settlements is being done by the Department of Housing and does not form part of this project.
- d) Earthing: All stands where the galvanised pipes are replaced must be properly earthed and an earth leakage test done.
- e) Hard material: Adequate allowance must be made for excavation in hard material.

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PS7 HEALTH AND SAFETY FOR CONSTRUCTION WORK

Tendering Contractors are to prepare Health and Safety Plans in accordance with Johannesburg Water's Health and Safety Specification (refer to Volume 2: Occupational Health and Safety Specification and Environmental Management Plan for Capital Investment Projects). The legal imperatives for this requirement stem from the Construction Regulations (2003), and more specifically the following:

- Regulation 4(1)(a): A client shall prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same
- Regulation 4(1)(d): A client shall take reasonable steps to ensure that each principal contractor's health and safety plan is implemented and maintained on the construction site.
- Regulation 4(2): A client shall discuss and negotiate with the principal contractor the contents of the health and safety plan and thereafter finally approve the health and safety plan for implementation.
- Regulation 5(1): A principal contractor shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan, based on the client's documented health and safety specification.

PS7.1 PROJECT-RELATED OCCUPATIONAL HEALTH AND SAFETY RISKS

According to the Construction Regulations (2003), a Health and Safety Plan "means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified". Apart from complying with the Health and Safety Specification (Volume 2), specific attention is drawn to the identification and assessment of risks. The tendering Contractors are required to consider *inter alia* the following risks (where applicable):

Project- and site-specific risks:

- Excavation
- Hand tools
- Working in confined space
- Site establishment
- Traffic control
- Gas detection
- Access to pits
- Machinery use
- Working close to existing services i.e. electrical, waste water etc
- Working close to traffic
- Working at night
- Domestic animals (on private property)
- Loading/unloading - of trucks
- Material delivery
- Material handling
- Waste handling
- Mixer operator
- Placing concrete
- Machine operator
- Compressors – Air
- Workshops
- Excavator
- Fire prevention and protection
- Fuel supply
- Laying of pipes

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<ul style="list-style-type: none"> Trenches – Digging of
<input type="checkbox"/> Use of portable electrical tools <input type="checkbox"/> Gas welding-cutting operations <input type="checkbox"/> Drivers – of vehicles <input type="checkbox"/> Electrical installation – Maintenance of

Safe work and emergency procedures need to be prepared to address the relevant abovementioned risks.

PS7.2 GUIDE TO RISK ASSESSMENTS

PS7.2.1 Nine steps to Effective Risk Assessments

- Step 1 Identifying the current as well as emerging hazard, risks or exposures.
- Step 2 Aim to identify major hazards, don't waste time on the minor and detail except if such hazard has the potential be repeat itself on a frequent basis.
- Step 3 Involve as many people as possible in the ongoing risk assessment process especially those at risk.
- Step 4 Gather all the information and analyze it.
- Step 5 Look at what actually could or has occurred including non-routine operations.
- Step 6 Use a systematic approach to ensure all hazards are adequately addressed.
- Step 7 Assess the risks identified or the risk has occurred by taking into account the effectiveness of current as well as controls under consideration.
- Step 8 Ensure the process is practical, realistic, cost and business effective.
- Step 9 Always record the assessment in writing including i.e. assumptions, date and why a particular decision has been made.

PS7.2.2 How serious is it?

Probability			Consequences	
A	Common	1	Fatality or permanent disability.	
B	Has Happened	2	Major injury.	
C	Could Happen	3	Average Lost Time Injury.	
D	Not Likely	4	Minor Injury.	
E	Practically impossible	5	Medical Treatment or less.	

		Probability				
Consequence		A	B	C	D	E
	1	1	2	3	4	5
	2	2	3	4	5	6
	3	3	4	5	6	7
	4	4	5	6	7	8
	5	5	6	7	8	9

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Risk rating	Action
1 - 3 = Serious	Immediate (within 1 week).
4 - 5 = High	Within 1 month.
6 - 7 = Moderate	> 4 weeks.
8 - 9 = Acceptable	No action but will consider from time to time.

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Part	T1	T2	C1	C2	C3	C4

PORTION 2: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS

INTRODUCTION

Detailed under this section of the Document are the variations to the standardised specifications (SANS1200). The clause numbers hereunder consist of a prefix, such as “PSA” indicating an amendment to SANS 1200A, and a number that represents the number of the clause in SANS 1200A.

SANS 1200A: PRELIMINARY AND GENERAL

PSA GENERAL (1986)

PSA 2 INTERPRETATION

Add the following new clause:

“PSA2.9 SUPPORTING SPECIFICATIONS

City of Johannesburg Metropolitan Municipality, Public Road and Miscellaneous By-laws, Code of Practice for work in the road reserve (COP), Latest Version.

Should any requirement of this COP conflict with any requirement of the standardised or particular specifications the requirements of the COP shall prevail.

The COP is available at Johannesburg Roads Agency Offices, Wayleaves Department, Contact number: (011) 298 5000”

PSA 3 MATERIALS

PSA 3.1 QUALITY

Add the following to this sub-clause:

“The Contractor must supply and/or take delivery as necessary, deliver all material and is responsible for the handling, transport and storing of the material. All material, but especially fragile material, must be handled with care and any damaged material must be repaired or replaced according to the Engineer's instructions at the Contractor's expense.

Before material is used the Engineer must approve the manufacturer's published instructions. All material used must carry the appropriate official standardization mark and the Tenderer must produce on request certificates that show that the material comply with this requirement”.

PSA 5 CONSTRUCTION

PSA 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS

Replace the words "traffic crossings" in the heading and in text of this sub-clause with the words "accommodation of traffic"

add the following at the end of the existing clause(s):

“The Contractor shall comply with the requirements of the COP and PS 5.7. This clause shall be applicable for all other parts/sections of the works.

The complete closure of any road shall not be permitted without the prior written consent of the Engineer.”

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PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Delete the existing clause and replace with the following:

“The Contractor shall be held responsible for any damage to overhead or underground services and he shall take all necessary measures to protect them. All work or protective measures shall be subject to approval of the authority concerned. In the event of a service being damaged, the Contractor shall immediately notify the authority concerned as well as the Engineer. The Contractor shall not repair any such service unless instructed to do so.

Timely written notice shall be given by the Contractor to the Engineer and to the authority or department concerned of the Contractor's intention to work across or near any existing works or services and such work shall not commence until the necessary permission has been received. The Contractor will not be entitled to claim for any delay in the construction programme caused by compliance with the requirements of this clause. Work across or near any existing works or services shall be carried out in compliance with the requirements of the relevant authority or department.

Where no underground services are shown on the drawing or scheduled, but the possibility of their presence can reasonably be inferred, the Contractor shall ascertain, by exploratory excavations using hand tools, or by specialist equipment for the detection of services as instructed by the Engineer, whether any such services exist within the relevant section of the Site. The Contractor shall complete such an investigation well in advance of the start of construction work in the said section and he shall submit a report in good time to enable the Engineer to make whatever arrangements are necessary for the protection, removal or diversion of the services before any construction work commences.

Whilst every effort will be made to ensure that any information relating to underground services is correct, the Employer and Engineer takes no responsibility for the accuracy, or for the completeness of the information. The Contractor will be held responsible for any damage to services and shall be liable for the cost of making good the damage. All such costs incurred by the Employer will be deducted from monies due to the Contractor.

Manhole covers; valve boxes, hydrants, etc. shall not be covered over and shall be accessible at all times.

After an existing service has been passed in laying the service pipe, but before backfilling has been started, the Engineer or relevant authority shall be informed in order that they may certify in writing that the service has not been damaged.”

PSA 5.5 DEALING WITH WATER ON WORKS

Add the following paragraph:

“The Contractor shall be deemed to have acquainted himself during tender stage with the groundwater conditions.”

PSA 5.7 SAFETY

Add to the Sub-Clause:

“All work and particularly work carried out in the proximity of buildings, bridges, tanks or other structures shall be carried out in compliance with the regulations framed under the Occupational Health and Safety Act, No 85 of 1993 and the Minerals Act, (Act 50 of 1991) (including shoring where necessary) to ensure the safety of structures that are at risk.

The Contractor shall make available for the duration of the Contract safety helmets, gumboots and any other necessary safety equipment for sole use by the Engineer and his representative(s).”

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PSA8 MEASUREMENT AND PAYMENT

PSA 8.1.2.3 Contractor to Price all Items

Add the following paragraph;

"The grouping of payment items under one all-inclusive rate is prohibited. Each payment item shall have its own rate. Where the Contractor elects not to insert a rate for any particular item, then it shall be deemed to be zero".

PSA8.2.1 Fixed-charge and value related items

Add the following at the end of the existing clause(s):

"Where lump sums are provided for a preliminary and general item or section of the schedule of quantities is provided to cover the Contractor's charges for compliance with the requirements of the conditions and specifications of Contract, **if so required** the Contractor shall provide a lowest-level composition of the various sub-items that result in the total provided sum."

PSA8.2.2 Time-related items

Add the following at the end of the existing clause(s):

"Where lump sums are provided for a preliminary and general item or section of the schedule of quantities is provided to cover the Contractor's charges for compliance with the requirements of the conditions and specifications of Contract, **if so required** the Contractor shall provide a lowest-level composition of the various sub-items that result in the total provided sum."

This shall include the complete costs for the provision of the SMMEs facilities, tools and equipment to site, and the erection (establishment) on site, the removal upon Contract completion or other of the storage facility and other fixed charged obligations. **Unit (Sum)**

PSA8.4.2.2 This shall include the complete costs for the provision of the SMMEs facilities, tools and equipment to site, and the erection (establishment) on site, the removal upon Contract completion or other of the storage facility and other fixed charged obligations. **Unit (month)**

PSA 8.3 SCHEDULED FIXED-CHARGED AND VALUE-RELATED ITEMS

PSA 8.3.1 Contractual Requirements

Add the following at the end of the existing clause(s):

"The Contractor shall provide a lowest-level composition of the sum in the space provided. If more space is required the Contractor shall use the Returnable Schedule item T2.2.33"

PSA 8.3.3 Other Fixed-charge obligations

Add the following at the end of the existing clause(s):

"The Contractor shall provide a lowest-level composition of the sum in the space provided. If more space is required the Contractor shall use the Returnable Schedule item T2.2.33"

PSA 8.3.2.1 Facilities for Engineer

Delete the existing clause and replace with the following:

"This rate shall include the complete costs for the provision of the Engineer's facilities (as listed below) to site, the erection (establishment) on site and the removal upon Contract completion or other. **Unit: Sum**

- a) Engineer's Office (No...)
- b) JW ISD team office (No...)
- c) QCFs and CLO's Office (No...)
- d) Meeting room (No...)

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- e) Parking (No...)
- f) Name boards (No...)
- g) Communication

PSA 8.4 SCHEDULED TIME RELATED ITEMS

PSA 8.4.2.1 Facilities for Engineer

Delete the existing clause and replace with the following:

"This rate shall include the complete costs for the provision of the Engineer's facilities (as listed below) to site, the erection (establishment) on site and the removal upon Contract completion or other. **Unit: Month**

- a) Engineer's Office (No...)
- b) JW ISD team office (No...)
- c) QCFs and CLO's Office (No...)
- d) Meeting room (No...)
- e) Parking (No...)
- f) Name boards (No...)
- g) Communication
- h) Survey equipment, assistants and material"

Add the following to the payment description paragraph:

"The sum tendered for item (i) shall provide full compensation for all equipment, assistants and materials provided in terms of these specifications (refer Schedule A PSAB: Engineer's Office) and sub-clause 5.5 of SANS 1200 AB".

PSA 8.4.3 Supervision for duration of Construction Add

the following to this sub-clause:

"The Contractor shall provide a lowest-level composition of the sum in the space provided. If more space is required the Contractor shall use the Returnable Schedule item T2.2.33"

PSA 8.4.5 Other Time-related obligations Add

the following to this sub-clause:

"The Contractor shall provide a loEast-level composition of the sum in the space provided. If more space is required the Contractor shall use the Returnable Schedule item T2.2.33"

Add the following sub-clauses:

"PSA8.4.6 Provide protective safety clothing **Unit: Month**

The rate shall cover the cost for the duration of the Contract to provide safety helmets, gumboots and any other required safety equipment as per PSA 5.7 above.

PSA8.4.7 On-site security **Unit: Month**

The rate shall cover the cost to provide security for staff and materials for the duration of the Contract. (See PS10.7). The Contractor may employ an independent service provider and the rate shall cover said service including all overheads associated with that service."

PSA 8.3.2.2. Material Storage sheds for SMMEs **Unit month**

This shall include the complete monthly costs for the provision and maintenance of the SMMEs facilities, tools and equipment, supervision for the duration of the Contract and Other time-related obligations on site for the period Contract implementation

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PSA 8.3.5 Additional Contractual Obligations

PSA 8.3.5.2 OHS Act ObligationsUnit: month

The rate shall include the complete cost for the provision of resources (human and equipment), communication, transportation and travelling, documentation of activities and reporting activities required to fully comply with the implementation and maintenance of the Health and Safety Plan as per the Health and Safety Specifications contained in Volume 2 for the duration of the Contract. The contractor shall ensure that all personnel comply including SMMEs and the Meter Supplier's technical support staff.

PSA 8.3.5.3 EMP Obligations Unit: month

The rate shall include the complete cost for the provision of resources (human and equipment), communication, transportation and travelling, documentation of activities and reporting activities required to fully comply with the implementation and maintenance of the Environmental Management Plan contained in Volume 2 for the duration of the Contract.

PSA 8.7 DAYWORK

Dayworks will be paid according to the stipulations of the special conditions of Contract.

Add the following item:

“PSA 8.9 Compensation in terms of **sub clause 9.1.4** for delays due to the circumstances described in **sub clauses 9.1.1 and 9.1.2** of the general conditions of contract, as amended

..... **Unit: day**

The unit of measurement shall be the number of working days approved by the engineer during which the contractor was delayed or prevented from executing the contract. In the event of delays for part of a working day only, such fractions of a working day shall be added to calculate the total delay.

PSA 8.5 SUMS STATED PROVISIONALLY BY EMPLOYER'S AGENT

AMEND SUBCLAUSE 8.5.b)1 AND ADD THE FOLLOWING ITEMS:

a) Temporary protection of services.....Unit:Stated No.

b) Community Liaison OfficersUnit: Stated month

The stated sum shall cover full compensation and all costs payable on a monthly basis, to provide a full time qualified and suitable experienced 2x Community Liaison Officers for the duration of the contract. The stated sum shall also cover for the CLO salary, the cost of typing, printing and distributing notices, cellular facilities of minimum of R300 up to R500.

c) JW ISD.....Unit: Stated month

The stated sum shall cover full compensation and all costs payable on a monthly basis, to provide a full time qualified and suitable experienced JW ISD for the duration of the contract. The stated cost shall also cover for the JW ISD salary, the cost of typing, printing meter data reports, cellular facilities of minimum of R300 up to R500.

d) Community awareness materialUnit:Stated Sum

The sum stated shall be for the sourcing of community awareness material, from 3 independent sources and shall be reviewed and selected by the client for approval and acceptance.

Volume	1	2	3			
Part	<i>T1</i>	<i>T2</i>	<i>C1</i>	<i>C2</i>	C3	<i>C4</i>

e) QCO.....Unit: Stated month

The stated sum shall cover full compensation and all costs payable on a monthly basis, to provide a full time qualified and suitable experienced 6X QCOs for the duration of the contract. The stated cost shall also cover for the QCOs salaries.

Plumbing TrainingUnit: Stated Sum

The sum stated shall be for the training of labour but not limited to plumbing, sourcing of community awareness material, from 3 independent sources and shall be reviewed and selected by the client for approval and acceptance.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS 1200AB: ENGINEER'S OFFICE (1986)

PSAB 3 MATERIALS

PSABNAME BOARDS

3.1

Delete and replace the standard clause with the following:

"The Contractor shall supply and erect, at approved sites, four (4) nameboards that shall comply as regards size, painting, decorating and detail, with the recommendations for the standard board of the south African Institution of Civil Engineers. The Employer, Engineer and Contractor to be painted on the boards shall be as ordered or as shown on a drawing.

Each board shall be made of tempered hardboard of thickness at least 12 mm, so braced on the reverse side as to prevent warping, and mounted on two or more, as necessary, firmly planted poles. Refer to detailed drawings." Four name boards are to be provided under this Contract.

PSABOFFICE BUILDING (S)

3.2 *Delete and replace the standard clause with the following:*

"3.2 (a) Engineer's Office

The Contractor shall provide and furnish one office for the use of the Engineer. Each office shall consist of one room with a floor area of at least 6 m² and a ceiling height of at least 2.5 m. Each office shall be weatherproof, shall have a wooden boarded floor that is at least 150 mm above the ground, and shall be provided with a ceiling and a lining to the walls, or equivalent insulation, with an acceptable type of door with a secure lock, and two opening windows of glazed area at least 3 m². Each office shall be well ventilated and shall be so insulated as to provide comfortable working conditions.

The internal furnishings of each office shall include

- i) one trestle table, 2 m long x 1 m wide x 0,9 m high, with a smooth top;
- ii) one table or desk having a top of size at least 1,5 m x 0.9 m and at least one lockable drawer;
- iii) two chairs;
- iv) a lockable upright steel cabinet with three shelves or a steel filing cabinet with four drawers; v) an acceptable blind on each window; vi) acceptable lighting;
- vii) provision, as detailed in the project specification, for heating in winter and cooling in summer.

The Contractor shall also supply a toilet for the exclusive use of the Engineer.

On completion of the Works, ownership of the buildings and their furnishings shall revert to the Contractor who shall remove them from the Site.

3.2(b) JW ISD Team Office

The Contractor shall provide and furnish one office for the use by the JW ISD team and local labour and shall include:

- i) Office shall be at least 6m X 3m, with one entrance door and four windows (that can be opened),
- ii) With acceptable blinds on each window,
- iii) Three (3) reference table, having a top size of at least 2m long X1,5m wide X 0.9m high, iv) Two (2) four drawer steel filing, and ten (10) chairs, v) One (1) drawing hanging rank, vi) Proper lighting and two electrical power points, and
- vii) Heating facilities (for winter) and cooling facilities (for summer)

3.2(c) QCFs and CLO's Office

The Contractor shall provide and furnish one office for the use by the QCFs and CLO's Office and shall include:

- i) Office shall be at least 6m X 3m, with one entrance door and four windows (that can be opened),
- ii) With acceptable blinds on each window,
- iii) Three (3) reference table, having a top size of at least 2m long X1,5m wide X 0.9m high, iv) Two (2) four drawer steel filing, and ten (10) chairs, v) One (1) drawing hanging rank,
- vi) Proper lighting and two electrical power points, and

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Contract JW14335
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Volume 1 – Contract
Section C3 – Scope of Work

vii) Heating facilities (for winter) and cooling facilities (for summer)

3.2 (d) Meeting Room

The Contractor shall in addition to his facilities further provide at the site camp the the meeting room for the Engineer. The meeting room shall have adequate seating and table to hold site and other meetings, for 10 people.

3.2 (e) Parking

The Contractor shall provide four (4) shaded parking areas, each 3m x 3m, constructed of a steel tube frame and painted white, with minimum a 50mm layer of 19mm stone laid on the ground. **3.2 (f)**

Location of the site camp In addition to the standard requirements:

- i) The location of the office unit shall be selected in consultation with the Engineer.
- ii) The Engineer must approve all internal furniture."

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS 1200AB: ENGINEER'S OFFICE (1986)

PSAB 3 MATERIALS

PSAB 3.1 NAME BOARDS

Delete and replace the standard clause with the following:

"The Contractor shall supply and erect, at approved sites, four (4) nameboards that shall comply as regards size, painting, decorating and detail, with the recommendations for the standard board of the south African Institution of Civil Engineers. The Employer, Engineer and Contractor to be painted on the boards shall be as ordered or as shown on a drawing.

Each board shall be made of tempered hardboard of thickness at least 12 mm, so braced on the reverse side as to prevent warping, and mounted on two or more, as necessary, firmly planted poles. Refer to detailed drawings." Four name boards are to be provided under this Contract.

PSAB 3.2 OFFICE BUILDING (S)

Delete and replace the standard clause with the following:

"3.2 (a) Engineer's Office

The Contractor shall provide and furnish one office for the use of the Engineer. Each office shall consist of one room with a floor area of at least 6 m² and a ceiling height of at least 2.5 m. Each office shall be weatherproof, shall have a wooden boarded floor that is at least 150 mm above the ground, and shall be provided with a ceiling and a lining to the walls, or equivalent insulation, with an acceptable type of door with a secure lock, and two opening windows of glazed area at least 3 m². Each office shall be well ventilated and shall be so insulated as to provide comfortable working conditions.

The internal furnishings of each office shall include

- v) one trestle table, 2 m long x 1 m wide x 0.9 m high, with a smooth top;
- vi) one table or desk having a top of size at least 1,5 m x 0.9 m and at least one lockable drawer;
- vii) two chairs;
- viii) a lockable upright steel cabinet with three shelves or a steel filing cabinet with four drawers; v) an acceptable blind on each window; vi) acceptable lighting;
- vii) provision, as detailed in the project specification, for heating in winter and cooling in summer.

The Contractor shall also supply a toilet for the exclusive use of the Engineer.

On completion of the Works, ownership of the buildings and their furnishings shall revert to the Contractor who shall remove them from the Site.

3.2(b) JW ISD Team Office

The Contractor shall provide and furnish one office for the use by the JW ISD team and local labour and shall include:

- iv) Office shall be at least 6m X 3m, with one entrance door and four windows (that can be opened),
- v) With acceptable blinds on each window,
- vi) Three (3) reference table, having a top size of at least 2m long X1,5m wide X 0.9m high, iv) Two (2) four drawer steel filing, and ten (10) chairs, v) One (1) drawing hanging rank, vi) Proper lighting and two electrical power points, and
- vii) Heating facilities (for winter) and cooling facilities (for summer)

3.2(c) QCFs and CLO's Office

The Contractor shall provide and furnish one office for the use by the QCFs and CLO's Office and shall include:

- iv) Office shall be at least 6m X 3m, with one entrance door and four windows (that can be opened),
- v) With acceptable blinds on each window,
- vi) Three (3) reference table, having a top size of at least 2m long X1,5m wide X 0.9m high, iv) Two (2) four drawer steel filing, and ten (10) chairs, v) One (1) drawing hanging rank,
- vi) Proper lighting and two electrical power points, and
- vii) Heating facilities (for winter) and cooling facilities (for summer)

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Contract JW14335
Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase
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Volume 1 – Contract
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3.2 (d) Meeting Room

The Contractor shall in addition to his facilities further provide at the site camp the meeting room for the Engineer. The meeting room shall have adequate seating and table to hold site and other meetings, for 10 people.

3.2 (e) Parking

The Contractor shall provide four (4) shaded parking areas, each 3m x 3m, constructed of a steel tube frame and painted white, with minimum a 50mm layer of 19mm stone laid on the ground.

3.2 (f) Location of the site camp

In addition to the standard requirements:

- iii) The location of the office unit shall be selected in consultation with the Engineer.
- iv) The Engineer must approve all internal furniture."

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS1200 C SITE CLEARANCE (1982)

PSC 1 SCOPE

PSC 1.1 Add:

Except where noted, all the work covered by this specification shall be done labour intensively.

PSC3 MATERIALS

PSC3.1 DISPOSAL OF MATERIALS

All excavated material which is unsuitable for the use in the permanent works or is unsuitable for local dumping and spreading on site must be removed and dumped at a separate spoil sites by the Contractor, identified by the Contractor to be suitable and legal for this type of dumping.

The Contractor is responsible for all arrangements and all costs for the attainment of suitable spoil site and fulfillment of all associated prescriptions. The individual spoil sites must conform to the environmental management plan for the Contract.

PSC 4 PLANT

PSC 4.1 Delete this clause and replace with:

The Contractor shall provide all tools and equipment needed for clearing and grubbing.

PSC5 CONSTRUCTION

PSC5.1 AREAS TO BE CLEARED AND GRUBBED

All areas to be cleared, if in undisturbed natural surroundings, shall have undulating borders, so as to create a softer look.

PSC 5.2 CUTTING OF TREES

PSC 5.2.1 Protection of persons, animals and structures To this clause add:

PSC 5.2.1.1 Preferred method of removing trees

Where trees are to be cut down and their root systems grubbed out labour-intensively, the following method is recommended:

1. The first team should trim the trees within the area to be cleared. The treetops should be cut, leaving a trunk about 5 m high. All side branches should be cut off using axes and saws. The timber resulting from the trees should be sawn up into convenient lengths and stacked to one side. Separate piles should be made for leaves and thin branches.
2. Bush and other tough vegetation should be cut down by the second team, to ground level if possible, cut to convenient lengths and stacked.
3. After trees have been trimmed and bushes have been cleared from an area of at least 100 m², the third team can start. Grass, leaf litter and remaining vegetation should be removed at ground level by means of spades or hoes. The resulting debris should be raked to one side and added to the piles of thin branches and leaves.
4. Once a large enough portion of ground is clear, the fourth team should fix a strong rope to the top of the remaining portion of a tree-trunk. Then they should dig a trench around the tree and chop through the roots. The trench should be about one metre deep (less if the tree is small) and the team should attempt to undermine the tree stump. As soon as one tree has been trenched and all accessible roots cut through, a team of labourers should be gathered to pull the tree down by means of the rope. As the tree moves, further roots may become visible and accessible: these roots should be cut free at the level of the base of the hole while the pulling team rests. Progressively the tree trunk is thus brought down, using the leverage

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

of the length of the trunk to tear out as many roots as possible. Once the tree and stump have been brought down, they should be rolled away from the hole and cut into convenient lengths. All major roots must be dug out and removed to the specified depth.

5. Large bushes should be trenched and their root systems removed. The roots of smaller bushes

can be dug out together with the grass roots.

The soil dug out of the trenches around trees and large bushes should then be returned to the trenches. Roots should be carefully separated from the soil and only clean soil used for backfill. The tree hole backfill is to be compacted in thin layers as follows: the soil is to be dampened and mixed and then placed into the trenches in layers about 100 mm thick. The soil in each layer shall be compacted with hand stampers until firm. The trenches shall be compacted up to 200 mm below the ground surface. The rest of the soil can then be thrown loose into the trenches.

PSC5.2.3.2 Individual trees

Care shall be taken to protect indigenous trees. The Contractor shall replace any tree damaged or removed outside the areas to be cleared and grubbed. A tree is defined as having a trunk diameter of more than 150mm at a height of more than 0,3 m above ground level.

PSC 5.3 CLEARING

- c) Delete the content of this clause and replace with:
"the removal and disposal of structures that encroach upon or may otherwise obstruct other work on Site (see requirements of clause 5.8);"

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS 1200L: MEDIUM PRESSURE PIPELINES (1983)

INTERPRETATIONS

PSL 2.4 ABBREVIATIONS

In addition to the existing clause the following shall apply: HDPE:
High density polyethylene

Pipe classes as indicated in the Drawings and Specifications will mean the following:

<i>Work pressure kPa</i>	<i>HDPE</i>	<i>Steel Pipes</i>	<i>mPVC Pipes</i>
300			
600	6	6	6
900	9		9
1 000		10	
1 200	12		12
1 500			
1 600	16	16	16
1 800			
2 100			
2 400			
2 500		25	

PSL3 MATERIALS

Add the following to the existing specified clauses:

PSL 3.1 GENERAL

Materials for this Contract should preferably be obtained from manufacturers who operate an effective quality management system such as that described in SANS 0157 or ISO 9000.

PSL3.7.1 mPVC pipes

High impact mPVC Class 16 and shall conform to SANS 1283 for diameter up to and including 315mm with a fully end load restraint coupling system approved by Johannesburg Water. All mPVC pipes shall be in 6m lengths.

Fittings and specials for uPVC pipes shall be manufactured in Grade 14 cast iron, rated to at least 1 600 kPa working pressure. Unless otherwise specified by the engineer, fittings and specials shall be bitumen dipped. Fittings and specials shall comply with SANS 546. Socketed ends shall be to SANS 966.

PSL 3.7.2 Polyethylene pipes

Class 16 HDPE type IV pipes, plain ended for butt-welding, shall be used unless otherwise indicated. All HDPE pipes greater than or equal to 75 mm diameter are to be heat fusion welded (i.e. butt welded) in accordance with SANS specifications. The internal butt welds shall not protrude by more than 4 mm. Pipes smaller than 75 mm are to be jointed with compression type fittings.

PSL3.8.3 Flanges

Flanges shall comply with the requirements of SANS 1123 (as amended). Flanges designed for working pressures of less than 1 600 kPa shall have flat flange faces and those for working pressures equal or greater than 1 600 kPa shall have raised flange faces.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

It shall be the responsibility of the Contractor to ensure that flanges on pumps, valves, fittings, specials and pipes to be fitted together, are fully compatible.

Machined surfaces shall be coated with a mixture of white lead and tallow or another approved protective composition before these are affected by rust.

PSL 3.8.8 Jointing of HDPE pipe

Add the following new sub clause

Jointing of HDPE pipe shall be by means of welding, welded flanges or approved external compression type fittings (Plasson or similar approved).

PS L3.10 VALVES (CLAUSE 3.10)

Add the following to this clause

PSL3.10.1 General

All valves for this Contract shall be supplied with a full set of instruction manuals describing routine maintenance and repairs, as well as a complete parts list. All wearing parts for all valves used during this Contract shall be readily available in South Africa.

PSL3.10.2 Gate valves

All gate valves up to 200 mm diameter and up to 1 600 kPa working pressure shall be a resilient seal gate valve type. All other gate valves shall be wedge gate valves.

Resilient seal gate valves (RSV) shall comply with SANS 664 (as amended). All RSV valves shall be Class 16. Plain-ended valves shall be suitable for the type of pipe specified, and, in the case of spigotted valves shall be complete with couplings for the type of pipe specified. The valves shall have a straight, unobstructed body passage without pockets. The valves shall allow back sealing to allow replacing of spindle seals under pressure. The spindle seal shall consist of a double O-Ring arrangement with a wiper ring. RSV valves shall have non-rising stainless steel spindles. Gates shall be completely rubber covered and shall be supported by guides.

Wedge gate valves shall be of the class as specified, but not less than Class 16. Plain-ended valves shall be suitable for the type of pipe specified, and, in case of spigotted valves shall be complete with couplings for the type of pipe specified. All wedge gate valves shall be of Trim C: Stainless steel trim. Seat rings shall be pinned in position. The gland shall have a back sealing ring and at least 3 rings of acceptable packing material. The lugs on the gate and spindle are to be machined.

On all valves the design of the guides shall be such that the valve can be mounted in any position. All flanges, unless otherwise required, shall be to SANS 1123-1600. Flanges for valves larger than 200 mm and/or working pressure higher than 1 600kPa shall be spot-faced. All valves larger than 150 mm to be installed in pump stations shall have indicators. All valves shall, unless otherwise specified, be clockwise closing. Gearing shall be chosen to limit the effort on hand wheels or valve keys to 500N. Unless otherwise specified, caps for key operations will be required for buried valves and hand wheels on valves situated in accessible chambers.

PSL3.10.3 Air valves

All air valves shall be double purpose air valves suitable to:

- Vent a filling pipeline.
- Release pressurized air from a full pipeline.
- Relieve vacuum (allow air intake) during emptying of a pipeline.

The air valve shall be of a single chamber design incorporating an integral “anti shock” orifice to limit shock induced pressure to twice the rated working pressure of the valve. The air valve shall have an intake orifice diameter of at least the nominal diameter of the valve. The valve design shall incorporate an over-pressure safety feature that will prevent explosive failure. The feature

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

shall consist of easily replaceable components. Air valves up to 50 mm nominal diameter shall, unless otherwise specified, be for a screwed BSP connection. All other air valves shall be flanged. The air valve provision and installation shall also include the provision and installation a control valve and a chamber as per the applicable detail drawing.

PSL3.10.4 Control valves (pressure reducing / sustaining / relief, rate-of-flow)

The control valves shall be fully automatic, requiring no external power source. The control valves shall have large filter(s) in the control circuit. All pilot valves shall after being set, be sealed with sealing wire and lead seals. All pilot valves shall be permanently marked. The valve shall be delivered complete with a appropriate brick chamber (similar to that of the bulk meters) and a full set of operating instructions and a diagram indicating the control logic.

PSL 5 CONSTRUCTION

In addition to the existing clause the following shall apply:

PSL 5.1.3 Keeping pipelines clean

Pipe laying operations and precautions taken during pipe laying shall be aimed at eliminating the necessity for cleaning of completed mains. However, should foreign matter have entered or remained in the pipelines, the Contractor shall arrange for the mains to be cleaned (at the Contractor's expense) to the satisfaction of the Engineer prior to testing.

PSL5.6 VALVE AND HYDRANT CHAMBERS

Valve, scour valve and hydrant chambers shall be constructed as detailed on the standardised typical drawings of the Employer or approved designed chambers by the Engineer. The rate tendered for the specific valve and hydrant chamber shall exclude all pipes, valves, hydrants and fittings but shall include excavation, compacted backfill, all concrete or brick work, formwork and steel reinforcing as well as concrete covers.

PSL 5.8 BRICKWORK

The joints of exposed faces shall be flush trowelled, hard and smooth and shall be rubbed for the full width of the joint as the work proceeds to give a hard polished finish.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PSLC5.10 DISINFECTION OF WATER PIPELINES

Delete existing clause and replace with:

On satisfactory completion of hydrostatic testing all pipelines shall be flushed with potable water supplied by the Employer. The Contractor shall ensure that the water used for flushing is disposed of in an approved manner without causing damage, nuisance or injury. If required the Contractor shall arrange for all pipelines to be sterilised by chlorination by an approved specialist firm after flushing has been complete. The preferred method of sterilisation is as follows:

The volume of the section of the pipeline to be chlorinated is calculated. A concentration of 8 – 10 ppm of chlorine to this volume of water is injected into the pipeline at the point of charging to form a highly concentrated chlorine block about 20 m in length. Charging of the pipeline is then commenced with chlorine being continuously inject at a concentration of 3 – 4 ppm. This moves the highly concentrated block throughout to end of that section of the pipeline. This results in high concentration and short contact times in the high contamination zones and lower chlorine concentration with longer contact times in the other zones.

During this process each scour is left closed. When the section of pipeline is fully charged, each scour in “blown” under pressure until there is no evidence of turbidity. The highly concentrated block is scoured out of the pipeline at the end of the section of pipeline. During this scouring process, chlorine is injected into the pipeline at the charging point at a concentration of 3 – 4 ppm. Generally after a 24 hour contact time water sample analysis indicates chlorine concentrations of 1-2 ppm.

In all cases of chlorination, HTH granular chlorine is to be dissolved with water prior to injection.

The chlorinated water shall thereafter be drained from the pipelines and disposed of in an approved manner if necessary, after dechlorination, without casing damage, nuisance or injury. The mains shall then be refilled with potable water.

PS 5.12

Secondary mains leakage detection and repair

Active leakage control shall consist of a series of logical steps to locate and repair reticulation mains system leaks. Leaks shall be exposed, quantified and costed by the Contractor upon issuing of written instruction by the Engineer to do so. Repairs shall only be conducted once the Engineer has approved the repairs methodology and costs.

Leakage detection shall be conducted in accordance with Standard Specification in SANS03061999 Clause 9.2, utilising the best suited or combination of methods available, by JW. The Contractor shall plan, programme and co-ordinate with the relevant department of JW to ensure that resources are used effectively and no clashes occur among the various active Project Contracts. No claims for delays as a result of poor programming, coordinating and communication shall be entertained by the Engineer.

PS 5.13

MEASUREMENT AND PAYMENT

PS 5.13.1

Secondary mains leakage detection and repair

- a) Supply or hire specialist equipment for the detection of leaking underground water pipes, recording of leak location and size and submission of a report to engineer**Unit: Sum**

The rate shall include the cost for the supply or hire of specialist leak detection equipment, resources and materials, preparation work (locating and excavation) and the execution of the activity as described above and the re-instatement of the excavation through backfilling, compaction, levelling and cleaning.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

SANS 1200 DA EARTHWORKS (SMALL WORKS) 1988

PSDA 1 SCOPE

PSDA 1.1 Add: Except where noted, all the work covered by this specification shall be done labour intensively.

PSDA 3 MATERIALS

PSDA 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

PSDA 3.1.1 Method of classifying

To this clause add: Material supplied from commercial sources will not be classified.

PSDA 3.1.2 Classes of excavation

Delete this clause and replace with:

The classification of excavations shall be according to clause PSDB 3.1 Classification for hand excavation (pipe trenches) of this project specification.

PSDA 4 PLANT

PSDA 4.1 EXCAVATION PLANT

Delete this clause and replace with:

As the project is required to be labour based, the only excavation equipment allowed will be (an) air compressor(s) and appropriate hand held pneumatic tools.

PSDA 4.2 TRANSPORT

To this clause add:

For hauls up to 200 m wheelbarrows shall be used. For hauls over 200 m, mechanical equipment is permitted with the stipulation that it shall be hand loaded. Off-loading may be by mechanical means.

Add a new clause:

PSDA 4.3 COMPACTION EQUIPMENT

No limitations are placed on the Contractor in his choice of compaction equipment.

PSDA 5 CONSTRUCTION

PSDA 5.1 PRECAUTIONS

PSDA 5.1.1 Safety

PSDA 5.1.1.1 Barricading and lighting

Delete this clause and replace with:

In terms of the Occupational Health and Safety (OH&S) Act, No. 85 of 1993, every excavation by which the safety of persons may be endangered shall be barricaded with a barrier sufficiently strong to contain pedestrians and prevent them from falling into the excavations at times when visibility is low.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Delete a) and b) and insert the following:

“The Contractor shall light and barricade all materials, excavations and objects, which constitute an obstruction or danger to the public as a result of his operations.

In addition to the above, the following shall apply to all excavations:

- 1) Barricading supports shall be portable and self-standing i.e. such as not to disturb the existing surface. Horizontal planks shall be at least 100 mm wide, painted in red and white bands and shall be fixed to the support at heights of 0,45 m, 0,75 m and 1,25 m above the ground.

The system shall be rigid when erected and shall present a neat and orderly appearance. The system of barricading either as specified above or an alternative, must be approved by the Engineer before excavations commence. It should be noted that chevron plastic tape alone, is not regarded as adequate protection around excavations and its use for that purpose shall not be approved. The use of the “fluorescent orange plastic netting” would be considered provided the support system complies with the requirements of the Works, Machinery and Safety Act.

- 2) At night, flashing orange lights shall be placed at each end of every trench under construction and at intervals not exceeding 15m apart along barricades. The proximity of street lights shall not relieve the Contractor of any responsibility in respect of barricading and lighting.
- 3) All signs and barricades shall be inspected every day before the morning and evening peak traffic periods and at least once during the day. The Contractor shall advise the Engineer of the name of the individual appointed to carry out these inspections.
- 4) Warning lights and barricading components which are damaged, disturbed, lost or stolen shall be replaced and repositioned by the Contractor immediately at his own expense. Night watchmen are to be utilized where necessary to guard barricading and lighting from theft and vandalism. The Contractor shall comply with the requirements for barricading of the COP, save where the requirements of the code are varied by Portion 1 and 2 of the Project Specification. Should the Contractor fail to provide adequate lighting, signing and barricading, access to properties, or leaves the site in a dangerous condition, the Engineer shall be entitled to:
 - 1) Suspend all work under the Contract until in the Engineer's opinion the Contractor's obligation in these respects have been fulfilled.
 - 2) Arrange for any emergency work to be carried out by some other agency and to deduct the cost of this work from any monies due to the Contractor “

PSDA 5.1.1.2 Safeguarding of excavations

In this clause delete the words "Factories, Machinery and Building Work Act, 1941" and replace with "Occupational Health and Safety (OH&S) Act, No. 85 of 1993 and as amended".

In addition to the existing clause, the following shall apply:

- i) Loose ground, materials, tools and appliances shall be kept clear of the edge of the excavations and a pathway at least 1.0m shall be left clear around such edge.

No separate or additional payment shall be made for timbering and shoring and allowance must be made for this work in the Schedule Rates for excavation.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Timbering, shoring, etc. directed to be left in the excavations will be paid for at the scheduled rates.

The Contractor shall be solely and entirely responsible for maintaining excavations in a safe condition and his responsibility shall in no way diminish by any instruction by the Engineer to take additional or improved protection or precautionary measures.

PSDA 5.1.1.3 Explosives

Explosives shall not be used on this project. Non explosive methods shall be used. Hard rock and large boulders shall be drilled at suitable spacing using hand held pneumatic tools and shall be split by means of suitable equipment or expanding materials.

Add a new clause:

PSDA 5.1.1.4 Maximum length of open trench

Unless otherwise permitted by the Engineer, not more than 100 m of trench in one place shall be opened in advance of the completed pipeline that has been backfilled.

PSDA 5.1.6 Excavated material not to endanger or interfere

In addition to the existing clause the following shall apply:

A safe, clear path must be kept open at all times for pedestrians. Equipment, materials and waste must be stored, stockpiled or removed in such a manner that pedestrians are never endangered and that the nuisance level is kept to a minimum. If construction activities occupy the whole footway and verge area so that pedestrians are forced to walk in the traffic lane, adequate protection from traffic must be provided.

Where instructed by the Engineer or where the Works impose a danger to traffic or pedestrians, the Contractor shall remove off Site excavated material to temporary stockpiles (approved by the Engineer) and the return to Site, excavated material for use as backfill or bedding.

PSDA 5.1.8 Road Traffic Control

The complete closure of any road is not permitted without the prior written consent of the Engineer.

PSDA 5.2 METHODS AND PROCEDURES

PSDA 5.2.3 Placing

PSDA 5.2.3.2 Restricted backfill and compaction at structures In the second paragraph:
delete the figures "250" and replace with "120"; delete the word "mechanical" and replace with "hand".

PSDA 5.2.6 Transport for Earthworks

PSDA 5.2.6.1 Freehaul

All haul shall be freehaul.

PSDA 5.2.6.2 Overhaul

Delete and replace with:
All haul shall be freehaul

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS1200 DB: EARTHWORKS (PIPE TRENCHES) (1989)

PSDB 1 SCOPE

PSDB 1.1 Add:

Except where noted, all the work covered by this specification shall be done labour intensively.

PSDB 2 INTERPRETATION

PSDB 2.1 SUPPORTING SPECIFICATIONS

Add the following sub-clause:

e) City of Johannesburg Metropolitan Municipality, Public Road and Miscellaneous By-laws, Schedule 2 - Code of Practice for work in the road reserve (COP), Latest Version. Should any requirement of this COP conflict with any requirement of the standardised or particular specifications the requirements of the COP shall prevail.

PSDB 3 MATERIALS

PSDB 3.1 CLASSES OF EXCAVATION

Delete this clause and replace with:

Classification of material for various types of hand excavation will be based on the results of a dynamic cone penetrometer. The category of material shall be determined by testing the material at regular intervals and at various depths along the centre line of the trench. A minimum of 5 tests shall be done at each location and the average number of blows of the tests shall be used to determine the category of material.

The interval between test locations shall be determined by the variation of material type but shall not exceed 50m. The depth of testing shall be determined by the variation of material type and can vary in hardness with increasing depth of excavation. Table PSDB 3.1 indicates the categories:

TABLE PSDB 3.1: Classification for Hand Excavation

Category of Material	Consistency		DCP Blows to Penetrate 100 mm	
	Granular	Cohesive	Granular	Cohesive
<u>Soft</u> Soft excavation shall be excavation in material that can be efficiently removed from the trench using a pick and shovel but not requiring prior breaking using mechanical equipment such as pavement breakers	Up to medium dense	Firm to stiff	0-6	1-5
<u>Intermediate</u> Intermediate excavation shall be excavation in material that require loosening with a hand spike (gwala) before being removed from the trench	Dense	Stiff to very stiff	7-15	6-8

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

<u>Hard</u> Hard excavation shall be excavation in material that requires prior breaking using mechanical equipment, such as pavement breakers with clay spades, before removal from the trench.	Very dense		16-50	-15
Category of Material	Consistency		DCP Blows to Penetrate 100 mm	
<u>Rock</u> Rock excavation shall be excavation in material other than described above which by nature of the material requires prior breaking using mechanical equipment, such as pavement breakers with moil points, before being removed from the trench	-	-	>50	>15

PSDB 3.5 BACKFILL MATERIAL

Delete sub-clause (b) of this sub-clause and replace with the following:

The quality of materials used for subgrade in areas subject to traffic loading shall comply with PSDB 5.9.4.

PSDB 3.6 MATERIALS FOR RE-STATEMENT OF ROADS AND PAVED AREAS

PSDB 3.6.2 Gravel

Delete these sub-clauses and replace with the following:

Material used in the re-instatement of pavement layers shall fall into either of the following categories:

- Foundation material recovered from the excavation of trenches across existing roadways which, if so instructed by the Engineer, shall be set aside and re-used as sub-base material.
- New material which shall conform to the requirements of:
 - Clause 3.2.1 of SABS 1200 ME for the Sub-base.
 - Clauses 3.2 and 3.3 of SABS 1200 MF for the Base course.
 - Clause 3.2.2 of SABS 1200 ME for the Gravel Wearing Course.

Material used in the backfill underneath the pavement layers shall fall into either of the following categories:

(a) Stabilised backfill

The aggregate used for stabilised backfill shall be a sandy or gravelly material containing particles up to 38 mm and shall not have a plasticity index of more than 10. Aggregate must be obtained from an approved source.

The tendered rate for stabilised backfill shall include full compensation for all material including the Portland cement used at a rate of 6% of the dry mass of the backfill. Wherever pipes cross surfaced streets the backfill must be stabilised.

(b) Soilcrete

Where so ordered and scheduled, the culverts shall be backfilled with soilcrete in lieu of a compacted gravel or lean concrete. Soilcrete shall consist of an approved soil or gravel mixed with 5 % by mass of Portland cement and only sufficient water to give it a consistency that will permit the soilcrete to be placed, using vibrators, so that all voids between the culverts and the sides of the excavation are properly filled. The height to which the backfill in soilcrete is taken shall be as determined by the Engineer and any remaining backfill shall be carried out as described for granular material.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The aggregate used for soilcrete shall be a sandy material but may contain larger particles up to 38 mm and it shall have a plasticity index of more than 10. Material containing detrimental amounts of silt or clay shall not be used for soilcrete. The aggregate shall be obtained from an approved source.

The soilcrete shall be mixed on Site by means of suitable concrete mixers and the water and cement contents shall be carefully controlled. The material shall be placed and then thoroughly compacted by means of vibrators so that all voids are filled. Stones or other approved form work shall be packed at culvert ends to prevent the soilcrete from flowing outside the required limits. The rate shall cover the cost of constructing soilcrete backfilling complete, including Portland cement calculated at the rate of 5% of the dry mass of the soil used. Overhaul will not be paid on any cement, water or aggregate used for the soilcrete.

PSDB 3.6.4 Asphalt carpet

Delete this sub-clause and replace with the following:

The bituminous surfacing shall be a medium grade hot-mix asphalt.

PSDB 3.7 SELECTION

Delete the second sentence and replace with the following:

The Contractor shall use selective methods of excavating in order to produce material suitable for the bedding cradle or the bedding blanket.

c) Delete the last paragraph and replace with:

Subject to the provisions of clause 3.5, hard rock and boulders from the excavations shall be incorporated in the main fill, but shall be suitably mixed with other backfill materials.

PSDB 4 PLANT

PSDB 4.1 EXCAVATION EQUIPMENT

Delete this clause and replace with:

All trenches shall be excavated by hand to the specified width and depth. As the project is contractually required to be labour based, the only excavation equipment allowed will be (an) air compressor(s) and appropriate hand held pneumatic tools.

PSDB 5 CONSTRUCTION

PSDB 5.1 PRECAUTIONS

PSDB 5.1.1 General

Add the following to this sub-clause:

The Contractor shall programme his activities in such a way that long sections of trenches do not lie open for undue periods of time, as this poses a security risk. The pipes shall be laid as soon as possible after excavation of the trenches and the trenches then backfilled. Under no circumstances will trenches be left open for more than 1 week.

The Contractor shall inform the Johannesburg Road Agency (JRA) at least 2 days in advance of the actual date on which he proposes to excavate in any road or footway.

PSDB 5.1.3 Accommodation of traffic and access to properties

Delete this sub-clause and replace with the following:

The Contractor shall comply with the requirements of the **COP** and **PS 5.7**.

PSDB 5.1.4 Existing services that intersect or adjoin trenches

Add the following to this sub-clause:

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Where it is necessary for a pipeline to pass under existing drains, the Contractor shall carefully excavate and backfill around them. During the course of the work, the drains shall be adequately supported to the satisfaction of the Engineer. Any damage shall be reported without delay and shall be made good by the Contractor before backfilling.

The penalty payable for damaging existing services shall be **R5 000 per offence**, which exclude the cost of the repair of the service that will be for the account of the Contractor.

PSDB 5.2 MINIMUM BASE WIDTHS

Delete this sub clause and replace with the following:

The base width and depths of all trenches shall be as follows:

DESCRIPTION	DEPTH (mm)	WIDTH (mm)
Erf connections	500 cover	400
Yard connections	450	300

For secondary mains larger than 250 mm the requirements of clause 5.2 shall still apply. Should the excavated trench width exceed the specified width adjacent to and for 300 mm above the barrel of the pipe, remedial measures shall be directed and shall be provided at the Contractor's cost unless it can be shown that such excess width is due to factors beyond the Contractor's control.

PSDB 5.4 EXCAVATION

Add the following to this sub-clause:

Where the pipe trench crosses surfaced roads the Contractor shall neatly cut four parallel grooves into and through the "black top" before excavating between the inside 2 grooves. The outside 2 grooves should be 100 from the inside ones. The cost of this operation, where not scheduled separately, will be deemed to have been included in the general rates for excavation.

Pipe trenches shall be excavated in lengths not exceeding 100m, unless approved otherwise by the Engineer.

PSDB 5.5 TRENCH BOTTOM

Delete the existing clause and replace with:

Compaction of the trench bottoms shall be by the way of power driven plant.

The Contractor shall maintain the floors of completed trenches in good condition. Floors softened or eroded through stormwater, seepage water or otherwise, must be rectified by removal of the softened material and its replacement with approved material firmly compacted in layers not exceeding 150mm in compacted thickness or with 10MPa concrete where directed, at the Contractor's cost.

Accurately located recesses shall be cut into the bedding cradle or trench bottom to accommodate pipe joints and such recesses shall be properly shaped and sized to enable jointing to be carried out without difficulty. For welded joints the recesses shall provide a clear space not shallower than 500mm below the pipes - refer to drawing number LB-2.

The placing of hardcore or concrete screed shall be entirely at the Contractor's cost in any section of the work where softening of floors has been due to the method of excavation or inadequate provision for drainage.

Floors of trenches in bad or waterlogged ground shall be excavated and replaced with hardcore filling, a hardcore base and/or a 20 MPa concrete screed as directed.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- i) Hardcore filling shall consist of 75 – 150 mm stone well rammed and compacted.
- ii) Hardcore base shall consist of 50 – 75 mm stone laid and compacted across the full width of the trench.

Preparation of trench bottoms shall be included in the schedule rates for excavation. Approved granular material imported to the site, or hardcore base, hardcore filling or concrete screed, used on trench floors shall be paid for separately.

PSDB 5.6 BACKFILLING

In addition to the existing clauses, work shall be carried out in accordance with PSDB 5.9 and the COP.

PSDB 5.6.1 General

Add the following to this sub-clause:

Notwithstanding the requirements of sub-clauses 5.6.1 and 5.6.6, no pipe joint or pipe-fitting shall be covered by either the blanket or the backfill prior to the successful completion of the visual inspection and the pressure testing of the relevant section of the pipeline without the written permission of the Engineer.

Insert the following after the first paragraph:

Trenches shall be backfilled level with adjacent surfaces immediately after completion of pipe laying and successful pressure testing (in addition all joints shall be watertight under normal operating conditions). Should pipe laying not be completed before work is due to cease for the day, the Contractor shall backfill the trench and re-excavate it the following day in order to complete pipe laying. The cost of the above activity shall be included in the Contractor's rates for excavation.

PSDB 5.6.3 & Disposal of Surplus or Unsuitable Excavated Material PSDB

5.6.4 Add the following to this sub-clause:

Excavated material from the trench that is unsuitable or has become surplus because of bulking, displacement by the pipe and importation shall be disposed of at approved tipping sites to be located by the Contractor. All unsuitable material shall be spoiled within 48 hours of excavation, failing which the Engineer shall be entitled to suspend work under the Contract.

The prior approval of the Engineer must be obtained before surplus material may be deposited, spread and leveled at agreed sites within the area of the works.

PSDB 5.6.5 Deficiency of Backfill Material

Refer to clause PSD 5.2.5.1 for free haul distances.

PSDB 5.7 COMPACTION

PSDB 5.7.2 Areas subject to traffic loads Add

the following to this sub-clause:

In areas subject to traffic loading and in constructed footways compaction shall be done in accordance with the requirements specified in this Project Specification and the COP requirements.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PSDB 5.8 CONSTRUCTION IN HEADINGS

In addition to the existing clause the following shall apply:

Generally in soft material the buttresses and portions of ground left for the purpose of supporting the sides of the trenches or headings providing access to private properties, shall be broken down as the refilling and compaction proceeds.

Where excavation for branch pipelines are refilled, after the main pipeline excavations, the materials in the latter shall be stepped or raked back and compacted in 300 mm layers, simultaneously with the refilling of the branch pipelines excavation.

PSDB 5.9 RE-INSTATEMENT OF SURFACES

Insert the following to the existing clause:

Re-instatement of surfaces shall be in accordance with the Project Specification, variations and additions to the SANS 1200 specification and the COP, where the COP will enjoy preference. The permanent re-instatement of the top 100 mm (or 150 mm in the case of arterial roads) of trenches in surfaced roads and sidewalks will be done by the Roads Directorate, unless instructed otherwise by the Engineer.

The Contractor shall backfill the trenches in accordance with the “Code of Practice for Excavations, Backfill and Re-instatements in the Johannesburg Municipal Area” issued by the Roads Directorate. The Contractor’s attention is drawn to the requirements regarding bearing capacity of the materials used at the various levels of backfilling under roadways, and the need for selection and modification of the in-situ materials excavated, or for importing suitable approved materials.

The Contractor will be held responsible for placing and maintaining the temporary top 100 mm (or 150 mm as above) until the permanent surface re-instatement carried out, and for settlement of the trench backfill, excluding that part of the permanent re-instatement is carried out by the Council. It is recommended that the Contractor avails himself of the facilities offered by the Roads Directorate’s Laboratory for testing the materials and the compaction of backfill layers as the work progresses. The Contractor shall provide the Engineer with copies of all test results, irrespective of what agency does the testing.

Except where separate provision for payment is made in the Bill of Quantities, the tendered rates shall include for:

- the selection and, where required, modification of excavated materials, or alternatively the importing of suitable approved materials used in trench backfill for re-instatement;
- all testing of the materials and the compaction;
- the provision of copies of the test results;
- the provision and proper maintenance of the temporary re-instatement of the top 100 mm (or 150 mm as stated above) of the trench until the JRA starts to construct the permanent reinstatement, or for a maximum period of twelve weeks after completion of the Work;
- the cost of permanent re-instatement work done by the Roads Directorate.

Should the Contractor fail to reinstate the surface of any trench or any other excavation, other than where re-instatement is to be carried out by the JRA, within two weeks of the conduit concerned having been laid or other work having been approved, the Engineer may, at his discretion, arrange for such re-instatements to be carried out by some other party and the cost of this work shall be deducted from monies due to the Contractor. The Contractor shall not be relieved of any responsibility for defects or claims arising from the condition of any trench reinstated by the other party on the instructions of the Engineer.

PSDB 5.9.2 Re-instatement - private property and commonage *Delete*

existing clause and replace with the following:

“Re-instatement shall be with the same type of surfacing (including supporting structures; example bedding layers, jointing sand, structural joints, etc) and to at least the same standard and conditions as existed before excavation took place.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Grass sods shall be neatly cut out from grassed areas to be excavated and shall be preserved and kept damp until they can be replaced during the re-instatement. All other material to be used for re-instatement shall be suitably stored for such purpose. Any settlement below original ground level that occurs during the execution of the Contract or the Defects Liability Period shall be made good by and at the cost of the Contractor within a reasonable period as determined by the Engineer.”

PSDB 5.9.4 Bitumen roads and surfaced footways: sub-base and base

In addition to the existing clause the following shall apply:

“No separate payment shall be made for the above procedure, which shall be deemed to be included in the rates and prices tendered. The tendered rates shall allow for the substitution of re-instatement of sub-base and base course layers with material complying with the latest version of the COP. Additional re-instatements necessitated by cover excavation, slips or falls shall be to the account of the Contractor.”

PSDB 5.9.5 Bitumen roads and surfaced footways – surfacing

Delete the existing clauses 5.9.5.1 and 5.9.5.2 and replace with the following:

PSDB 5.9.5.1 General

The Contractor shall inform the Engineer in writing when the road or surfaced verges are ready for re-instatement. The scheduled item for re-instatement of surfacing allow for widths 0,20 m greater than the specified trench widths for road crossings. Extra re-instatements necessitated by over excavation, slips or falls shall be to the account of the Contractor.

The Contractor shall not carry out re-instatement of surface trenches in roadways under the maintenance of the JRA, unless otherwise authorised in writing by the JRA and copied to the Engineer. The Contractor, at tendering stage, shall thus obtain rates in consultation with the JRA and shall be responsible for payment to the JRA.

PSDB 5.9.7 Re-instatement of concrete

In addition to the existing Clause 5.9 the following shall apply: All existing concrete surface shall be reinstated to original level and final finish (wood floated or steel floated or other) with unreinforced concrete of 15 MPa (minimum) strength. The reinstated concrete shall also not exceed 125 mm but shall not be less than 50 mm.)

PSDB 5.9.8 Interlocking blocks, paving slabs and bricks

All the existing blocks, slabs or bricks shall be cleaned and re-used. The blocks, slabs or bricks, which have been taken up, shall be stacked in a safe manner without restriction to vehicular or pedestrian traffic. Blocks, slabs or bricks around manhole covers shall be finished level with the manhole cover top. The cost of additional interlocking blocks, paving slabs or bricks required for complete re-instatement, over and above those taken up and stacked, shall be included in the rates tendered for the re-instatement of surfaces.

PSDB 5.9.9 Kerbing

All existing types of kerbing that has been removed shall be cleaned and stacked in a safe manner without restricting to vehicular or pedestrian traffic. The Contractor shall replace all kerbing removed during trenching.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PSDB 7 TESTING

PSDB 7.1 DENSITY TESTS AND IN-SITU SHEAR STRENGTH TESTS

Add the following to this sub-clause:

The JRA laboratory shall carry out quality control testing of compaction densities and in-situ shear strength. Any testing by the JRA will not relieve the Contractor of his responsibility to ensure adequate compaction and material quality throughout and the Contractor should therefore carry out his own regular tests. The Contractor shall furnish the Engineer with the originals of all such test results.

In the event that the Contractor does not conduct his own regular compaction and in-situ shear strength tests and relies on the results of the JRA laboratory, the Contractor will be liable for the costs associated with the re-testing of all failed sections of reinstated trench.

If any test result shows that the specified compaction or shear strength requirements have not been met, the Contractor shall at his own expense and within 7 days of receipt of the Engineer's instruction take the following remedial action:

- 1) Backfill material other than structural layers of bituminous roads and constructed footways
 - a) Trench excavations (other than road crossings)

The backfill material shall be removed to a depth of 450 mm for a distance of 2 m on either side of the point at which the test was taken. If the backfill material is suitable, it shall be replaced and re-compacted to the specified densities. Otherwise suitable material shall be imported and compacted and the excess material removed.

Where adjacent test results show that the backfill densities are below specified requirements, the entire length of trench between the points at which the tests were taken shall be reexcavated and re-compacted as required above. Density testing along trench excavations shall be carried out at intervals, as directed by the Engineer.
 - b) Trench excavations (road crossings)

As for (a) above save that the backfill material shall be removed to a depth of 450 mm over the full length of the trench.
 - c) All other excavations

As for (a) above save that the backfill material shall be removed to a depth of 450 mm over the extent of the excavation.
- 2) Structural layers of bituminous roads and constructed footways

In the case where a structural layer does not meet the shear strength requirements, the structural layer in question shall be removed. If, however, any other layers have been constructed on top of the layer in question, then all such layers shall also be removed at the cost of the Contractor, even if the shear strengths of these layers meet the specification.

 - a) Trench excavation (other than road crossings)

The layer shall be removed to its full depth for a distance of 2 m on either side of the point at which the test was taken. If the material is suitable, it shall be replaced and re-compacted to the specified shear strength. Otherwise suitable material shall be imported and compacted and the excess material removed.

Where adjacent test result show that the shear strengths are below specified requirements, the entire length of trench between the points at which the tests were taken shall be re-excavated and re-constructed as required above. In-situ shear strength testing along trench excavations shall be carried out at intervals, as directed by the Engineer.
 - b) Trench excavation (road crossings)

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

As for (a) above save that the layer shall be removed to its full depth over the full length of the trench.

c) All other excavations

As for (a) above save that the layer shall be removed to its full depth over the extent of the excavation.

3) Premix re-instatement

a) Trench excavations (other than road crossings):

The premix shall be removed for a distance of 1m on either side of the point at which the test was taken and reinstated in accordance with the COP requirement.

b) Trench excavations road crossings:

As for (a) above save that the premix shall be removed over the full width of the road.

c) All other excavations:

As for (a) above save that the premix shall be removed over the full extent of the excavation.

The Employer (where the Employer wishes to perform additional control tests) or the JRA shall not be liable for additional costs or delays arising from remedial work required to excavations, which have already been finally reinstated before their test results, become available.

PSDB 7.2 INSPECTION AT INTERMEDIATE STAGES OF CONSTRUCTION

The or shall call for an inspection of the works at the following intermediate stages of construction.

- (1) After completion of the trench excavation and preparation of the trench bottom; and before any pipe is laid.
- (2) After the selected backfill material has been placed around the pipe; and before the remainder of the trench is backfilled.
- (3) Before placing of premix on roads or any final surfacing on constructed footways.

Work shall not progress through the specified stages without the approval of the Engineer or his representative on site. Failure to comply with the provision of this clause shall result in the suspension of work for a period as determined by the Engineer.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 BASIC PRINCIPLES

PSDB 8.1.4 All haul shall be freehaul.

PSDB 8.2 COMPUTATION OF QUANTITIES

PSDB 8.2.3 Computation of Quantities

The base widths tabled in clause PSDB 5.2 shall be the maximum widths measured for payment.

PSDB 8.3 SCHEDULED ITEMS

Add the following new clauses:

8.3.1 Site Clearance and Removal of Topsoil

Add new items as follows:

PSDB8.3.1.1 Saw cut, remove and dispose of existing asphalt

The rate shall cover saw, cut, removal, handling, transport and proper off-site site disposal of all types of existing asphalt and stone crush base up to a maximum thickness of 40 mm..... **Unit: m²**

PSDB8.3.1.2 Saw cut, remove and dispose of concrete (un-reinforced)

The rate shall cover saw, cut, removal, handling, transport and proper off-site disposal of existing un-reinforced concrete of maximum thickness 150 mm. **Unit: m²**

PSDB8.3.1.3 Remove and temporarily store of paving block units

The rate shall cover removal, handling, transport and proper storage of all types of existing paving block units for later re-instatement. **Unit: m²**

PSDB8.3.1.4 Remove and temporarily store of grass sods

The rate shall cover removal, handling, transport and proper storage and maintenance of existing grass in sods for later re-instatement. **Unit: m²**

PSDB8.3.1.5 Remove and temporarily store all types of kerbing

The rate shall cover removal, handling, transport and proper storage of all types of existing kerbing for later re-instatement. **Unit: m**

PSDB 8.3.2 (b) Extra-over for intermediate material and rock

The extra-over rates for excavating in, intermediate and rock materials shall cover the additional cost of excavating and handling materials classified as such and shall include the cost of importing suitable bedding and backfill materials and the disposal of unsuitable material to the Contractor's tipping site and the replacement of same with suitable material. **Unit: m³**

PSDB 8.3.3. Excavation ancillaries

PSDB 8.3.3.4 Overhaul

Delete this sub-clause and replace with the following:

Overhaul is not applicable. Hence all distances applicable are considered as free haul distances and no additional payment will be applicable.

PSDB 8.3.5 Existing services that intersect or adjoin a pipe trench Add

the following to the end of the sub-clause:

- (v) notifying and attending upon the proprietor of the service,
- (vi) supporting and protecting the service while the pipeline is installed, inspected, tested and backfilled.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PSDB 8.3.6 Finishing

General

Delete “road”. This clause shall be extended to cover surfaces other than road surfaces,

The width of any trench through an area grassed or paved with bricks or pre-cast concrete units shall be the minimum practicable width, which in the opinion of the Engineer is sufficient. In the case of blocks this minimum area will be the minimum area over which units (whether bricks or pre-cast units) can be removed without requiring cutting.

The Contractor's rate for supply and lay of asphalt must provide for all plant, labour and material costs associated with the work, including inter alia:

The cost of the asphalt and foamed concrete, the collection, transport to site and placing in accordance with the JRA specification. All wastage and overbreak re-instatement costs, including the purchase of the asphalt and foamed concrete.

PSDB8.3.6.1 Replace “parking areas” with “areas other than roadways”.

Add the following new clauses:

PSDB 8.3.6.1a Re-instatement of asphalt surfaces

The rate shall cover supplying, loading, transporting and re-instatement all layers complete to previous levels (or levels to suite proper stormwater drainage), and surfacing by JRA of asphalt surfaced roads to drawing 0755/T/3 **Unit: m²**

PSDB 8.3.6.1b Re-instatement of concrete, complete

The rate shall cover loading, transporting and re-instatement complete to previous levels (or levels to suite proper stormwater drainage), and surface finish of 15 MPa (minimum) un-reinforced concrete strength. The reinstated concrete shall also not exceed 125 mm but shall not be less than 50 mm.) **Unit: m²**

PSDB 8.3.6.1c Re-instatement of bricks and pre-cast units, complete

The rate shall cover loading, transporting and re-instatement complete with bricks/pre-cast unit receival area preparation, compaction (minimum 90%Mod AASHTO density), levelling, 20 mm river sand bedding, laying bricks/units, plaster sand jointing, and compaction. **Unit: m²**

PSDB 8.3.6.1d Re-instatement of grass sods, complete

The rate shall cover loading, transporting, and re-instatement complete with grass-receival area preparation, compaction, levelling, laying sods, topsoiling, and watering (water not from property supply). **Unit: m²**

PSDB 8.3.6.1e Re-instatement of all types of kerbing, completing

The rate shall cover loading, transporting and re-instatement complete with sand-cement bedding, laying units, mortar jointing, haunching, and backfilling, compaction (minimum 90 % Mod AASHTO density) and levelling behind kerbs. **Unit: m**
SANS 1200 G: CONCRETE (1982)

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PSG 3 MATERIALS

PSG 3.1 APPROVAL OF MATERIALS

In addition to the existing clause the following shall apply:

The type of brand of cement stated in the Tender Certificate shall not be changed unless the Engineer's prior written approval to do so has been given.

PSG 5 CONSTRUCTION

PSG 5.2 FORMWORK

PSG 5.2.2 Preparation of formwork

In addition to the existing clause, the following shall apply.

Tapered plugs of wood or other material shall be used on the inside surfaces of formwork at all tie bolts and shall be withdrawn after the removal of the forms. Boltholes and the recesses formed by the plugs shall be completely filled with cement mortar smoothly and neatly finished flush with the concrete surface. Recesses with smooth interiors shall be roughened adequately to provide bond for the mortar filling.

Inside corners in the formwork shall have 25 mm by 25 mm triangular fillets, unless otherwise detailed or directed.

PSG 5.5 CONCRETE

PSG 5.5.1 Quality

PSG 5.5.1.7 Strength concrete

Add the following to this sub-clause:

The following concrete classes must be used in the following positions unless shown differently on the drawings:

Class 15MPa/19 mm Blinding layer, mass concrete, pipe encasings

Class 25MPa/19 mm All structural concrete

PSG 5.5.3 Mixing

PSG 5.5.3.2 Ready-mixed concrete

Concrete from an approved ready mixed concrete supplier shall be permitted provided it conforms to the specification. Such supplier shall be deemed to be a Sub-Contractor in terms of the Contract. The test results shall be acceptable when evaluated in terms of SANS 1200 G-7.3.

PSG 5.5.5 Placing of concrete

PSG 5.5.5.1 *In addition to the existing clause, the following shall apply:*

Concreting shall not commence until approval to do so has been granted, at least 24 hours notice being required. Concrete shall not be placed before the steel reinforcement has been checked and approved. Concreting shall be done during normal working hours and only, in exceptional circumstances, outside such hours.

PSG 5.5.6 Compaction

PSG 5.5.6.1 *Add the following to this sub-clause:*

Only mechanical vibrators will be allowed for compaction, unless the Engineer approves in writing any other method.

PSG 5.5.10 Concrete surfaces

PSG 5.5.10.3 *Add the following to this sub-clause:*

Benching in manholes and channels steel float finish

Top of manhole covers steel float finish

All other surfaces wood float finish

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

Contract JW14335
Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase 2

Volume 1 – Contract
Section C3 – Scope of Work

PSG 5.5.15 Records

Add the following new clause:

The Contractor shall maintain written records that provide detailed information in the form of a control chart indicating the compressive strengths of test cubes at 7 days and 28 days, including identification of the section where the concrete was cast and the class of concrete specified.

PSG 7 TESTS

PSG 7.2 TESTING

Add the following new clause:

PSG 7.2.5 Testing by the Engineer

The Engineer may, from time to time, require check tests to be done on concrete cube strengths in addition to the regular tests performed by the Engineer. The results of these tests will also be recorded on the control chart and will form part of the criteria for assessment of concrete quality. If required, a Provisional Sum has been included in the Bill of Quantities for this purpose.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS1200LB BEDDING (PIPES) (1983)

PSLB3 MATERIALS

PSLB3.3 BEDDING

Bedding for all pipes shall be Class B.

PSLB3.4.1 Suitable material available from trench excavation

The Contractor shall be required to use selective methods for preserving material suitable for bedding and to prevent it from being contaminated.

PSLB3.4.2 Suitable material not available from trench excavation

When suitable material is not available from trench excavations, material shall be obtained from commercial sources, unless otherwise indicated by the Engineer.

MEASUREMENT AND PAYMENT

PSLB 8.1 PRINCIPLES

ADD THE FOLLOWING TO THIS SUB-CLAUSE

PSLB 8.1.3 Volume of bedding materials

The volume of bedding material shall be measured net i.e. the volume of the pipe is to be deducted.

PSLB 8.1.5 Disposal of displaced material

DELETE THIS SUB-CLAUSE AND REFER TO CLAUSE PSDB 5.6.3:

PSLB 8.1.6 Free-haul

DELETE THE WORDS “of 0,5 km” IN THE FIRST LINE OF THIS SUBCLAUSE.

PSLB 8.2 SCHEDULED ITEMS

PSLB 8.2.1 Provision of bedding from trench excavations

DELETE THIS SUB-CLAUSE AND REPLACE WITH THE FOLLOWING:

Without the need for screening or other treatments:

a) Selected granular material.....Unit: m³

b) Selected fill material.....Unit: m³

The rates shall cover the cost of acquiring, from any point along the trench excavation as be Selected by the Employer's Agent within 5,0 km, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material within a free haul distance 5,0 km.

Including for screening and/or other treatment:

a) Selected granular material.....Unit: m³

b) Selected fill material.....Unit: m³

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The rates shall cover the cost of screening by means of mesh sieves or otherwise treating excavated material, at any point along the trench excavation as may be selected by the Employer's Agent, in order to produce bedding that complies with the relevant specification, delivering it to points along the trench, within 5,0 km, spaced to suit the Contractor's methods of working, of making good any backfill deficiency there may be from points where screened backfill material has been acquired, and of disposing of displace material within a free haul distance of 5,0 km.

PSLB 8.2.2 Supply only of bedding by importation

PSLB 8.2.2.3 From commercial sources (Provisional)

ADD THE FOLLOWING SUB-SUBITEM TO THIS CLAUSE:

“(c) Special bedding material

- 1) Description of material..... Unit: m² or m³
- 2) Etc for other items

The unit of measurement shall be the square metre or cubic metre of material as specified.

The rate shall cover the cost as specified for (a) and (b).” The rate shall include the cost of acquiring from commercial sources, transporting regardless of distance, off loading and placing in the trench bottom clean where ordered by the Employer's Agent.

ADD THE FOLLOWING SUB-SUBCLAUSE:

PSLB 8.2.6 Compaction Test

Compaction testing using the troxler method.....Unit: No

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

SANS1200 LF: ERF CONNECTIONS (WATER) (1983)

The following variations are applicable to the standard specification

PSLF5 CONSTRUCTION

PSLF 5.5.3 Pre-pay consumer meter provision and installation

Add the following new sub-clause:

The Contractor shall supply STS prepayment water meter boxes, which shall include; meter box and cover, meter and all couplings to connect to yard and/or erf connections all preassembled. Water meter boxes shall be sourced by the Contractor from an approved supplier by JW. The following type of installations exists; (a) (b) above the ground (bollard type).

PSLF5.8 Labour-intensive construction methods

Add the following new sub-clause:

Where any portion of works is to be executed by means of labour-intensive construction methods, the Contractor shall not utilise any mechanical equipment, plant or vehicles. Only hand-held or hand-powered equipment such as picks, shovels, crowbars, wheelbarrows, tampers and the like shall be utilised in all excavation, compaction and transport operations.

Where intermediate material is encountered during the excavation process, this shall be removed using hand-held and hand operated pneumatic drilling and breaking equipment.

PSLF 5.9 Erf connection provision and installation

Add the following new sub-clause:

The Contractor shall be required to provide and install HDPE (Class 12) erf connection as per the current standard detail of JW, refer to applicable details drawings herewith attached, for domestic and non-domestic consumers.

PSLF 5.10 Provision and installation of ball valves

Add the following new sub-clause:

a) Provision and installation of ball valves on existing and new yard connections

The Contractor shall provide and install ABB Kent (or similar approved) consumer valve boxes, complete with valves and couplings. The ball valve shall be provided in a box to be installed at least 400 mm into the ground and no more than 500 mm on the outside next to the property boundary, unless otherwise instructed by the Engineer.

PSLF 5.11 Communal standpipe (LOS1) provision and installation Add the following new sub-clause:

The Contractor shall provide and install a LOS1, as per the applicable detail drawing, as an alternative to a LOS 2 and 3, for stands where so directed by the Engineer. The communal stand pipe shall be installed minimum 1m from the secondary mains, outside any trafficable area.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PSLF8 MEASUREMENT AND PAYMENT

PSLF8.2.1.1 EXTRA OVER FOR ITEM 8.2.1 – FOR SADDLES

Add the following new sub-clause:

This rate shall cover only the cost to supply a saddle as per size stated below:

8.2.1.1	4	Bolt saddle	110 x 1	Unit: No
8.2.1.2	4	Bolt saddle	90 x 1	Unit: No
8.2.1.3	44	Bolt saddle	75 x 1	Unit: No
8.2.1.4	4	Bolt saddle	63 x 1	Unit: No
8.2.1.5	4	Bolt saddle	110 x 1½"	Unit: No
8.2.1.6	4	Bolt saddle	90 x 1½"	Unit: No
8.2.1.7	4	Bolt saddle	75 x 1½"	Unit: No
8.2.1.8	4	Bolt saddle	63 x 1½"	Unit: No

PSLF 8.2.4 Delete the existing clause and replace with the following:

PSLF 8.2.4.1 STS CONSUMER METER

PSLF 8.2.4.1.1 Supply of STS Prepayment Water Meter.....**Unit:No**

The rate shall include the cost for the supply, transportation, handling, including couplings and fittings as per JW standards. The meters must be compliant with the Metrology Act and be SANAS approved. Meters supplied must be approved by JW's Flow prior to installation.

PSLF 8.2.4.1.2 Customer Interface Unit (CIU).....**Unit: No**

The rate shall include the supply and pairing of the Customer Interface Unit to individual supplied STS water meters. Customer Interface Units shall be paired to tested meters by JW's Flow prior to installation.

PSLF 8.2.4.1.3 Annual Data Management Fee IOT Network Hosting.....**Unit: No**

The rate shall include provision and hosting of data between the meter and JW STS vending platform through IOT provisions.

PSLF 8.2.4.1.4 Installation of STS prepayment water meter **Unit: No**

The rate shall include the cost for the installation complete including minor excavations in all materials (no extra over item shall be allowed for intermediate, hard or rock materials), backfilling, compaction (minimum 90 % Mod AASHTO density), cutting of existing pipe in two places, disposal of cut-off pipe, installation of meter box and meter, commissioning, listing and submitting a location and meter detail record to the Engineer.

PSLF 8.2.4.1.5 Extra-over for pre-pay customer meter installation **Unit: No**

Some of the properties with existing road reserve originated yard connection are not HDPE pipes and 20 mm in diameter requiring additional couplings and HDPE pipe sections, each of maximum 1,000 mm length, to facilitate the meter box installation.

The rate shall include the cost for the additional cutting effort, couplings and sections of HDPE pipes required for existing yard connections of all materials other than HDPE and diameters less than 25 mm.

PSLF 8.2.4.1.6 Training **Unit: No**

The rate shall include training for Employer's staff on the meter functionality for (20 people per session). The training shall be provided to JW's project team and Depot's officials.

PSLF 8.2.4.1.7 Meter demonstration **Unit: No**

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The rate shall include demonstration of the meter to customers upon installation of a meter. The contractor shall demonstrate the meter functionality to customer and provide happy letters signed by the customer and the QCO for each stand.

PSLF 8.2.4.1.8 Technical Support.....**Unit: Month**

PSLF 8.2.4.1.8.1 On- Site Support

The rate shall include provision of site support to the contractor's SMME by the contractor's team/ meter supplier's technicians. The support shall consist of providing technical support for the duration of the project on a monthly basis during meter installations and to ensure meter functionality prior to meter handover to customers.

PSLF 8.2.4.1.8.2 Stand-by- Site Support.....**Unit: Month**

The rate shall include provision of site support by the contractor's team/ meter supplier's technicians after normal working hours. The support shall be made available by the contractor's /meter supplier's stand-by team from Mon-Friday (from 17h00-7h00), weekends and on public holidays. The contractor is to capture & record the complaints received and handled and submit the report thereof to JW on a monthly basis. The contractor shall provide stand-by support for the duration of the project on a monthly basis.

PSLF 8.2.4.1.9. Switch meters to prepaid mode.....**Unit: No**

Add the following new sub-clause

The rate of switching a meter installed in open to prepaid mode shall include rate for switching the meters by drive-by and or by Internet of things (IOT)

PSLF 8. 2.9 Add the following new sub-clause:

Erf connection provision and installation. Unit: m or No

The rate shall include the cost for the provision and installation of erf connections, complete as per the applicable detail drawing. Thus, the rate shall cover the cost for the provision of erf connections complete including HDPE (class 12) pipes, saddles, bends, tees, reducer and adapter connections, connecting to the mains, laying in light sandy material for the approximate pipe length as per item PSLF8.2.2 per erf, the laying of erf connections complete including supply of pipes, bends, tees, reducer and adapter connection and connecting erf and yard connection. For the following types of connections for specified diameters:

- 1) Domestic erf connection
 - a) Single short erf connections
 - b) Double short erf connections
 - c) Single long erf connections
 - d) Double long erf connections

PSLF 8.2.10 Add the following new sub-clause:

PSLF 8.2.10. Provision and installation of ball valves. Unit: No

a) Provision and installation of ball valves on existing and new yard connections

The rate shall include the cost for the provision, installation, all types of surface removals, excavation in all materials, cutting into pipes of all material and sizes (up to 40 mm diameter), installation of the valve, backfilling, compaction and surface re-instatements.

b) Provision and installation of ball valves on existing yard connections

The Contractor shall provide and install consumer valve boxes, complete with valves and couplings. At most properties the existing house connections are located close to the surface, therefore the ball valve shall be provided in a box to be installed at a depth less than 400 mm into the ground and no more than 500 mm on the outside next to the property boundary, unless otherwise instructed by the Engineer.

PSLF 8.2.10.2Extra-over for ball valve installation .. Unit: No

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Some of the properties with existing road reserve originated yard connection are not HDPE pipes and 20 mm in diameter requiring additional couplings and HDPE pipe sections, each of maximum 1,000 mm length, to facilitate the new valve installation as per above item.

The rate shall include the cost for the additional cutting effort, couplings and sections of HDPE pipes required for existing yard connections of all materials other than HDPE and diameters less than 25 mm.

PSLF 8.2.11 Add the following new sub-clause:

Communal standpipe (LOS1) provision and installationUnit: No

The rate shall include the cost for the provision, assembly and installation of communal stand pipes with all couplings complete including all pipework, bends and fittings (as per applicable detail drawing), excavation in all materials, providing saddles for secondary main pipes of all material and size (up to 160 mm diameter), backfilling, compaction and surface re-instatements.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Contract JW14335
Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase 2

Volume 1 – Contract
Section C3 – Scope of Work

PORTION 3: PARTICULAR SPECIFICATIONS

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Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PORTION 3: PARTICULAR SPECIFICATIONS

P SMALL DIAMETER PIPEWORK AND ANCILLARY WORK WITHIN ERVEN (YARD CONNECTIONS)

PA1 SCOPE

This specification covers the installation of new pipework from the boundary of an erf to the existing water supply pipework within an erf and includes ancillary work associated with the retrofitting within.

PA2 INTERPRETATIONS

PA2.1 DEFINITIONS AND ABBREVIATIONS

PA2.1.1 Fitting: A special or any item which connects two or more pipes and/or specials together and which may perform some other function.

PA2.1.2 Special: Any pipe other than a straight pipe including all sizes and types of specials such as bends, tees and reducers.

PA2.1.3 Meter unit or meter box: A pre-assembled unit comprising a water meter (or an allowance therefor) and a stoptap on the inlet side with inlet and outlet connections to fit HDPE piping, all contained in a plastic surface box.

PA2.1.4 Holderbat: A nylon or polypropylene pipe support clip with a fixing plug and screw complete with closure hood or a malleable cast iron pipe support with a metallic strap screwed to the pipe support.

PA2.1.5 Compression pipe fitting: A pipe fitting which may be jointed to pipes by the compression of a ring or sleeve on the wall of a pipe, with or without additional elements.

PA2.1.6 Pushfit fitting: A pipe fitting which may be jointed to pipes by simply pushing the pipe into the fitting.

PA2.1.7 Socket welded fitting: A fitting with sockets which may be welded to the ends of plain ended HDPE pipes or into sockets of larger diameter fittings by means of a heated tool.

PA2.1.8 Pipe joint assembly: Compression, threaded or socket welded fittings or a combination thereof jointed to each other and/or to segments of pipes.

PA3 MATERIALS

PA3.1 PIPES, FITTING AND COUPLINGS

PA3.1.1 Malleable CI pipe fittings
Malleable cast iron pipe fittings shall comply with the relevant requirements of SANS 509 and be hot-dip galvanised.

PA3.1.2 Polyethylene socket welded fittings
HDPE socket welded fittings shall be stabilised with carbon black against the effects of ultra violet radiation and shall comply with the requirements of DIN 16963 Parts 5, 8, 9, 10 and 14, as appropriate, for type A components; or ISO S 5 (PN10) and be approved by JASWIC.

PA3.1.3 Metallic compression fittings
Metallic fittings shall be approved fittings, which do not leak or slip when pressure tested with water in isolated link at a pressure of 1600 kPa.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- PA3.1.4 High density polyethylene pipes
HDPE pipes shall be Type IV, Class 12, complying with the relevant requirements of SANS 533 Part II and shall be listed by JASWIC as an accepted component.
- PA3.1.5 Steel pipes and fittings
Steel pipes and fittings shall comply with the relevant requirements of SANS 62 Parts I and II for seamless Medium Class pipes and be hot dip galvanised.
- PA3.1.6 Non-metallic compression type fittings
PP couplings used to join HDPE pipes together shall be Class 12 of the compression type. All fittings shall be either listed by JASWIC as accepted components; or be manufactured under a quality assurance system meeting the requirements of ISO Series 9000 and be approved by a major standards institution.
- All threads for off-takes shall be parallel threads in accordance with SANS 1109. Female offtakes, unless smaller than 32 mm in diameter and adequately stiffened, shall be reinforced with a Grade 316, or equivalent, stainless steel reinforcing cap.
- Flanges shall be provided with holes in accordance with Table D of BS 10.
- PA3.1.7 Polypropylene ball valves
PP ball valves shall be listed by JASWIC as an accepted component or comply with the requirements of DIN 3442 Parts 1 and 2.
- PA3.1.8 Copper alloy gate valves
Gate valves shall be of the non-rising spindle, solid wedge type with internally screwed ends and shall comply with the relevant requirements for Class 109 valves of SANS 776. Valves shall be listed by JASWIC as accepted components.
- PA3.1.9 Hose bib taps
Hose bib taps shall comply with the relevant requirements of SANS 226 for Class 1 taps. 20 mm Threaded bib taps shall be supplied.
- PA3.1.10 Plastic valve boxes
Valve boxes shall consist of a 300 mm long uPVC shaft of nominal diameter not less than 110 mm, a tight fitting polypropylene cap and a nylon cord tying the cap to the shaft. The shaft shall have 45 mm wide slots on opposite sides to within 100 mm of the top of the shaft to accommodate pipework. The edges of the slots shall be free of burrs, irregularities and notches. A 4 mm diameter hole shall be provided 20 mm above the top of each slot.
- The shaft shall be manufactured from piping complying with SANS 966 or 967. The minimum carbon black content of the polypropylene cap, after extrusion, shall not be less than 2%. Any knots tied in the nylon cord shall be burnt at the ends to prevent them from loosening.
- PA3.1.11 Pushfit fittings
Pushfit fittings shall be the Polypipe paragon pushfit type or equal and approved. Where used above ground, the body cap shall be black in colour.

PA4 PLANT

PA4.1 GENERAL

The Contractor shall provide all tools and equipment required to install pipework in accordance with this specification. The Contractor shall only use tools that are approved by the Engineer. Any materials that are damaged by the use of non-approved implements or tools will be rejected and the replacement cost shall be borne by the Contractor.

PA4.2 Compaction equipment

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

All compaction shall be carried out with hand stampers.

PA4.3 Specialised tools and equipment

The Contractor shall supply all specialised tools and equipment which, in the opinion of the Engineer, are required to machine cut concrete and reinstate paved areas.

PA5 CONSTRUCTION

PA5.1 Pipelaying on erven

PA5.1.1 Access to properties

Before commencing operations, the Contractor shall deliver to the owner or occupier of each house, or building, an approved printed notice informing him that the existing water supply will be interrupted at short notice and that the Contractor's employees will require access, at reasonable hours, for the purpose of installing certain pipework, disconnecting the existing water supply and reconnecting the erf pipework to the new water mains.

The Contractor shall regulate his work so as to cause the least possible inconvenience to consumers. The Contractor shall endeavour to cause the least possible damage to private property and shall, after backfilling, make good those portions of lawns, flower beds, driveways, pathways, etc., that have been disturbed or damaged by his operations.

The Engineer is to approve the notice before the Contractor may continue with mass production of notices.

The Contractor shall deliver the notice not less than two (2) working days to an owner before proceeding with installation.

PA5.1.2 Shutting off water to erven

The Contractor will be permitted to shut off water to erven only between 08:30 and 16:00 on weekdays and shall give the owner, or occupier, a minimum of 48 hours notice of his intention to temporarily disconnect the water supply. The Contractor shall use a printed notice approved by the Engineer for this purpose.

PA5.1.3 Pipelaying in trenches

Pipes in trenches shall be laid to straight lines and, as far as possible, to uniform grades along the routes shown on the drawings. HDPE piping may be bent to the sets indicated on the drawings.

HDPE pipes shall be cut square only with an approved pair of pipe cutters. Care must be taken to ensure that no sand, sediment or foreign matter enters the pipe whilst it is being installed.

In order to minimise pipe wastage, any off-cuts longer than 5,0 m may be jointed by means of straight compression fittings and made use of.

PA5.1.4 Pipes above ground

Pipes supplied from straight lengths (as opposed to coils) shall be laid to straight horizontal and vertical lines and securely fixed to walls by means of holderbats located at the positions shown on the drawings or as directed.

PA5.2 TRENCHES

Trenches shall have a nominal width of 300 mm and shall be 450 mm deep.

Backfill material shall be selected so that the bedding material and the backfill material to 100 mm above the pipe is free of stone particles larger than 20 mm in size.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

All compaction shall be undertaken with hand stampers. The backfill material shall be watered and well rammed to the approval of the Engineer. Portions of the trench containing pipe fittings may not be backfilled before the pipe installation is tested and approved by the Engineer.

PA5.3 RE-INSTATEMENT OF PAVED AREAS AND GARDENS

PA5.3.1 General

Where paved areas are affected by pipelaying operations, the affected paving must be removed and, after the trenches have been backfilled, reinstated. The Contractor shall remove paving with care so as to preserve the materials for re-use. In the case of tarmac paving, the edges shall be neatly cut and trimmed to straight lines.

PA5.3.2 Concrete paving

Where pipes are to be laid beneath cast in-situ concrete paving, the Engineer shall examine the paving together with the Contractor and determine whether the concrete is to be cut by hand or by machine.

If the concrete is to be cut by machine, the Contractor shall make neat saw cuts in the concrete, not less than 75 mm deep. Generally, two parallel saw cuts, 300 mm apart and centred on the pipe route will be required. Near structures, only one saw cut, approximately 300 mm from the structure, may be provided. The Contractor shall carefully break out the concrete, without damaging the edges of the remaining concrete.

Where the concrete is to be cut by hand, the edges shall be neatly cut and trimmed to straight lines.

PA5.3.3 Gardens

If for reasons as agreed by the Engineer, damage to gardens (lawns and vegetation) is unavoidable, the Contractor shall make good for damages caused. The lawn shall be replaced with instant lawn patches and shrubs shall be replaced with the same type that has been removed.

If a resident requests that a certain plant be preserved then the Contractor shall remove and tend to the plant at its site establishment. The plant shall be reinstated as soon as possible.

PA5.4 INSTALLATION OF VALVES AND TAPS

Valves shall be installed with the arrow on the body of the tap or valve pointing in the direction of flow. A new tap will be installed only if the existing tap is leaking and unrepairable.

PA5.5 INSTALLATION OF HOLDERBATS

Holderbats shall be either set and screwed into close tolerance holes drilled into the bricks with an approved masonry bit or caulked with a sand/cement mixture in oversized holes, as appropriate. Holes in masonry bed joints will not be permitted.

PA5.6 THREADED PIPES AND FITTINGS

Male threads of threaded pipes and fittings shall be covered with an approved PTFE jointing tape.

PA5.7 CONNECTION OF NEW WATER SUPPLY TO ERVEN PLUMBING

PA5.7.1 General

The disconnection and isolation of the old water supply is described in specification PB – Disconnection of old water connection.

The pipework between the existing pipes serving the erven from the road reserve shall be executed in accordance with the drawings.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Where exterior latrines exist, the existing water supply supply to individual residential erven may be shut off by closing the stoptap adjacent to the WC bowl inside the exterior latrine.

PA5.7.2 Connection at exterior latrines

After closing off the water supply, a minimum of two bricks must be carefully removed from the latrine walls immediately above the existing stoptap. A section of piping must then be removed from the existing galvanised iron piping to enable the fittings to be installed as detailed on the drawings or as directed by the Engineer. Thereafter, the HDPE piping laid from the road reserve may be connected and the brickwork made good to the satisfaction of the Engineer.

PSA5.7.3 Connection at house or outbuilding

After closing off the water supply, the galvanised steel piping below the ground where the connection is to be made shall be cut and removed. Thereafter, HDPE piping and compression fittings shall be installed as detailed on the drawings or as directed by the Engineer.

PA5.7.4 Connection at tap

After closing off the water supply, the above-ground galvanised steel piping leading to the tap shall be removed. HDPE piping and compression fittings shall be installed underground as detailed on the drawings or as directed by the Engineer. HDPE shall not be used above ground. Thereafter the pipework leading to the tap which was removed shall be installed.

PA5.7.5 Commissioning of plumbing

After the abovementioned connections have been completed to the satisfaction of the Engineer, the Contractor may prepare to turn the road reserve supply on. He shall open the taps on the erf to bleed the system of air, and thereafter turn the new supply on permanently.

PA5.7.6 Illegal erf/yard connections and/or bypasses locating and removal

The Contractor shall while executing the Works, identify and indicate to the Engineer all illegal erf//yard connections. Only on instruction from the Engineer the Contractor shall disconnect and plug or repair all the identified illegal yard connections.

PA 5.7.7 Standpipe (LOS2) provision and installation

The Contractor shall provide and install a LOS2 as an alternative to a LOS3, for stands where so directed by the Engineer. The stand pipe shall be installed minimum 1m from the stand boundaries, within the property.

PA 5.7.8 Stand pipe (LOS2) installation from temporary storage

The Contractor shall provide from temporary storage and install a LOS2 as an alternative to a LOS3, for stands where so directed by the Engineer. The stand pipe shall be installed minimum 1,000mm from the stand boundaries, within the property.

PA 5.7.9 Stand pipe (LOS2) removal and storage

The Contractor shall remove and temporarily store a LOS2 standpipe (complete as per applicable drawing) for the duration of the Contract or if required to install on another property as part of this Project. Where existing presently and installed as part of this Project, for stands where so directed by the Engineer.

PA 5.7.10 Yard connection provision and installation

Section F of the Works requires that the Contractor provide yard connections based on preset length increments for the provision and installation of 20 and 25 diameter HDPE (Class 12) yard connections for: a) 0 – 10 m,
b) 0 – 20 m, and
c) exceeding 20 m.

The yard connection shall be defined as the section of pipe from the boundary to the first on property draw-off connection or building, which ever is the shortest.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PA 5.8 LOCATING AND EXPOSE METER BYPASS ON EXISTING YARD CONNECTIONS

The Contractor shall locate, expose and assess all the bypassing of meters on existing yard connections. Bypasses shall be completely replaced as per Section F, Item F.19 of the Works. Replacement, and thus payment, shall only be executed with the prior approval of the Engineer. Where no such approval was obtained the Contractor shall not be reimbursed by the Employer nor allowed to remove such connection and shall re-instate such site to its original status at the cost.

PA 5.9 LOCATING AND ASSESSMENT OF EXISTING YARD CONNECTIONS

The Contractor shall locate, expose and assess the condition of all existing yard connections. Depending on the extent of the damage or deterioration, connections shall either be repaired or completely replaced as per Section F.20 of the Works. Replacement, and thus payment, shall only be executed with the prior approval of the Engineer. Where no such approval was obtained the Contractor shall not be reimbursed by the Employer nor allowed to remove such connection and shall re-instate such site to its original status at the cost.

PA 5.10 LOCATING AND DISCONNECTING OF EXISTING WATER SUPPLY

The Contractor shall in some circumstances be required, on instruction of the Engineer, to disconnect existing customers by locating and securely disconnecting the joint between the erf and yard connection within the road reserve. Such activity shall be required for pipes of various materials and for diameters up to and including 25mm.

PA 5.11 LOCATING AND RE-INSTATEMENT OF EXISTING YARD CONNECTION WHERE DISCONNECTED

The Contractor shall in some circumstances be required, on instruction of the Engineer, reinstate existing customers by locating and connecting the joint between the erf and yard connection within the road reserve. Such activity shall be required for pipes of various materials and for diameters up to and including 25 mm.

PA 5.12 LEAK DETECTION

Leakage detection shall be conducted in accordance with Standard Specification in SANS03061999 Clause 9.2, utilising the best suited or combination of methods available, by JW. The Contractor shall plan, programme and co-ordinate with the relevant department of JW to ensure that resources are used effectively and no clashes occur among the various active Project Contracts. No claims for delays as a result of poor programming, coordinating and communication shall be entertained by the Engineer.

PA 5.13 LEAK FREE TEST

Leakage detection tests shall be performed for a minimum duration of 5 minutes, utilizing the best suited or combination of approved methods available, by the Contractor.

PA 5.14 ON-PROPERTY INTERVENTION SURVEY, CRITERIA AND SPECIFICATION

The Contractor shall be required to execute a hundred percent (100%) pre-intervention survey and document the results of such survey per type of intervention and per stand on a Microsoft (MS) Excel workbook sheet in a format agreeable to the Engineer. Alternatively this could be captured in the specifically developed MIS (Management Information System) that could subsequently be used to track all stock, complaints, budgets, certificates etc for the SMMEs. MS Excel workbooks shall be provided separately per extension and appropriately named. The Contractor shall proceed to quantify and price the required work per type and per extension as per Schedule G of schedule of quantities on a different sheet within the same MS Excel workbook.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

This workbook shall be forwarded to the Engineer for formal approval of the anticipated work scope with any additional comments, all in an electronic format. The Contractor shall not commence with on-property intervention without formal receipt of such approval from the Engineer. Any work executed without such approval shall be for the Contractor's own account, including the cost for all associated works to reinstate the property to a condition similar to that prior to intervention by the Contractor.

Whilst formal approval has been obtained and the intervention successfully completed the Contractor shall only be paid if all the associated works to reinstate the property to a condition similar to that prior to intervention by the Contractor has been completed in totality. They shall submit to the Engineer an updated MS Excel workbook which shall contain on different sheets:

- a) the actual intervened items per stand,
- b) the total intervention quantities and price per type of intervention, and
- c) the different in cost between the original anticipated and actual cost.

NOTE: Formal documented variation orders, signed by the Engineer, must be provided for all varied works per stand. Variation shall not be recognised if such documentation is not available. Monthly formal capturing of variation order will be acceptable.

Based on this final submission to the Engineer, the Engineer shall proceed to execute a twenty percent (20% = 10% pre-intervention and 10% post-intervention survey of surveys executed by the Engineer) verification check on the Contractor's on-property intervention. A five percent (5 %) variance percentage on the total sample financial cost shall be allowed between the cost calculated by the Contractor and that by the Engineer. If the variance between to the Contractor's and the Engineer's findings are:

- a) **less than or equal** to five percent (5 %) for twenty percent (20%) of stands (taking into account any variations on the pre-intervention sample survey), the total amount submitted for payment shall be accepted as presented by the Contractor.
- b) more than five percent (5 %) for twenty percent (20%) of stands (taking into account any variations on the pre-intervention sample survey), the Contractor shall be required to recheck or re-verify their quantities at their own cost. After such verification by the Contractor, the Engineer shall re-compare the twenty percent (20%) of stands again, through comparing their survey verification stands (in the office, thus there will be only one (1) in-the-field-verification survey done by the Engineer), should Contractor's adjusted sample amount be less than or equal to five percent (5 %), it shall be accepted.

Should the Contractor's sample amount still exceed the five percent (5 %) variance after such reverification by the Engineer, JW shall reduce the total amount submitted for payment proportionally with whatever percentage the total sample variance exceeds the five percent (5 %) allowance.

The cost of the re-verification shall be for the account of the Contractor based on the rate tendered.

PA 5.14.1 100% Pre-intervention on-property survey

The Contractor shall be responsible for executing and documenting a hundred percent (100%) pre-intervention survey on all properties where pre-pay meters are to be installed. Appropriate resources shall be made available with regards to equipment and qualified staff.

The priced results of this survey shall be included, where possible, for the Engineer's approval prior to intervention being executed.

No payment for Schedule G.2 of the Works shall be made to the Contractor without the prior sample confirmation of such payment claimed items by the Engineer.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PA 5.15 ON-PROPERTY INTERVENTION CRITERIA AND SPECIFICATION

The criteria listed below shall serve as a guide for the repair and retrofitting of on-property plumbing fitting, **only where such fittings contribute UAW**. Broken or damaged fittings shall only be replaced on formal approval by the Engineer.

PS5.15.1 Water closet (WC) pans

PA5.15.1.1 Intervention criteria

- Complete replacement of the pan (without seat and lid), with a standard type that is acceptable to the Employer, is required if pan contribute to water wastage or is absent.
- Re-secure undamaged pans if not securely fixed to a competent concrete slab.
- Seat and lid shall not be installed if broken or missing.

PA5.15.1.2 Specification

The Contractor shall remove and dispose of defective toilet pans as per above replacement criteria. They shall proceed to provide and install new pans of a standard type that is acceptable to the Employer. Pans shall conform to SANS 497, and be; pedestal type, robust and durable construction, siphonic and flush-down are acceptable but must flush all solids utilizing between 8.0 and 9.5-litres/flush.

PA5.15.2 Water closet (WC) cistern and flushing mechanism

PAF.15.2.1 Intervention criteria

- Only leaking or faulty high-level cisterns shall be replaced by low-level cisterns,
- Full replacement of the low-level cistern if it is absent or have faulty flush mechanism component/s, cracked or broken tank,
- Cistern will only be replaced with of a standard type white plastic or porcelain cisterns that is acceptable to the Employer, generally material type (plastic and porcelain) with material type.
- Missing and broken/cracked lids shall not be replaced unless it contributes UAW, and
- Intact cisterns shall be remounted to the wall if not securely mounted.

PA5.15.2.2 Specification

The Contractor shall remove and dispose of defective toilet cisterns as per above replacement criteria. New provided and installed cisterns shall comprise one shell (tank) and one lid, be of lowlevel type and white in colour, be of a robust and durable construction, have SANS 821 approval, flush volume shall not exceed 9.5 litres or be less than 8.0 litres per flush, and construction shall accommodate both Side-Inlet (SI) and Bottom-inlet (BI) arrangements.

In addition:

- float valves (Inlet Valve) shall conform to SANS 752 approval, and shall be of non-metallic construction to minimize any scrap metal value.
- ball float shall conform to SANS 1006 approval, must be supplied with a lever arm, and be non-metallic construction to minimize any scrap metal value.
- flush valve shall conform to SANS 1509, be robust construction with minimum moving parts, and must be Method I overflow.

PA5.15.3 Water closet (WC) cistern peripherals

PA5.15.3.1 Intervention criteria

- Only where leaking or faulty high-level cisterns is replaced by low-level cisterns shall cistern peripherals be provided, and
- Only where existing low-level cisterns peripherals are faulty or missing, resulting in water wastage shall they be replaced.

PA5.15.3.2 Specification

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The Contractor shall remove and dispose of defective toilet cistern peripherals as per above replacement criteria. Cistern peripherals shall include all fittings to connect the cistern to the water supply and to a WC pan and render the suite operational (it excludes the flush valve, inlet valve and ball float which are measured as part of the cistern item).

PA5.15.4 Draw-offs (taps) and stop taps (*also known as stopcocks*) provisional sum

PA5.15.4.1 Intervention criteria:

The following shall be applicable:

- a) An existing tap shall be replaced with kind if such items contribute to water wastage due to the following:
 - the complete tap is missing,
 - the handle missing,
 - body, head parts or spindle is damaged, and
 - a competent water seal cannot be obtained with normal closure by hand a new washer was installed.
- b) Sophisticated existing taps shall be serviced on site where it is leaking as a result of a faulty washer, by replacing the washer.
- c) An existing stop tap shall be replaced with brass ball type if:
 - the complete stop tap is missing,
 - the handle missing,
 - body, head parts or spindle is damaged, and
 - a competent water seal cannot be obtained with normal closure by hand □ after a new washer is installed.

PA5.15.4.2 Specification

The Contractor shall remove and dispose of draw-offs as per above replacement criteria. Drawoffs and stop taps shall have SANS 226 approval, have non-removable handles and have a 15 mm or 20 mm nominal diameter. Washer shall comply to SANS 0252 – Part 1 and the rubber composition shall not promote microbial growth.

PA5.15.5 Plumbing fittings

PA5.15.5.1 Intervention criteria:

- a) Only where fittings are leaking shall new fittings be provided, as long is leak is not as a result of poor jointing, and
- b) Only where fittings are faulty or missing, resulting in water wastage shall they be replaced.

PA5.15.2 Specification

The Contractor shall remove and dispose of defective fittings as per above replacement criteria. Plumbing fittings shall include tees, bends and bushes of various materials and diameters up to and including 25 mm.

PA5.15.6 Scrap fittings

All scrap fittings shall be removed from the Project Area and destroyed to prevent their re-use elsewhere, which would undermine the effectiveness of this Project. The cost for this shall be included in the respective rates provided for the removal, provision and installation for the disposal of such items.

PA6 TOLERANCES

PA6.1 General

No deviation, except in the immediate vicinity of the ball valves, will be permitted from the minimum cover to pipes specified.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PA7 TESTING

PA7.1 General

After the pipework has been installed and before the trench is filled in at pipes, joints and fittings, the Contractor shall commission all the plumbing as described in 5.9.5.

The Contractor together with the Engineer shall, not less than 24 hours thereafter, carefully inspect all pipes, joints and fittings for leaks. All visible leaks shall be made good.

PA8 MEASUREMENT AND PAYMENT

PA8.1 General

Separate payment will not be made for costs associated with the opening and/or closing of valves on the main water supply, or for the emptying and refilling of pipe work and for the issuing of printed notices in terms of Clause 5.1.2. The costs of these items shall be deemed to be included in and distributed through the various items in the Schedule of Quantities.

A connection to existing pipework will be measured as a unit.

PA8.2 Scheduled items

- PA8.2.1 (a) *Excavate in all materials for trenches, backfill and compact* **Unit: m**
The rate shall cover the cost of complying with the requirements of 5.2. No extra payment will be made for bedding materials. The operation of selecting the bedding material and placing it under, round, and over the top of the piping will be regarded as part of the pipe-laying operation.
- (b) *Extra-over item (a) above: Hard excavation* **Unit: m³**
- (c) *Extra-over item (a) above for breaking up and removing concrete paving*..... **Unit: m²**
The rate shall cover the cost of complying with the requirements of 5.4 and shall include the removal, stockpiling and loading of surplus unwanted material.

PA8.2.2 Pipework

Pipe work between the house and the meter will be dealt with as described below.

Intervention criteria:

- Damaged or corroded pipework that does not facilitate the connection of plumbing fittings and could result in water wastage, shall be replaced. No wrapping shall be required for underground installations (unless otherwise directed by the Engineer).
- Pipes shall be fixed to masonry walls with suitable brackets (dissimilar metals shall not be in contact with each other).
- At joints white tape shall be used with all fittings.

Specification

The Contractor shall cut or remove and dispose of defective section of pipe as per above replacement criteria and provide, install and test new pipe sections for diameters up to 25 mm of various materials. Replacement pipes shall be either; I.P.S threaded union system pipe (available from Pace Plastics, Steve Molver, Tel 031-766 0222/ 083 461 6025 or from any other approved supplier), poly tube or HDPE all SANS approved.

Measurement and payment **Unit: m.**

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

The rate shall include the cost to supply, transport, handle, removal of existing (if any) and disposal, installation and testing of pipe up to and including 25mm diameter and cleaning of work area, for:

- I.P.S threaded union system,
- Galvanised Iron,
- HDPE, and
- Poly tube.

PA8.2.3 *Extra-over items 8.2.3 and 8.2.4 for specials* Unit: No.
Separate items will be scheduled for each type and diameter of special.

The rates shall cover the cost of supplying, temporary storage (where necessary) jointing and testing of threaded bib tap if existing is leaking.

PA8.2.4 *Make good for breaking up and removing concrete paving* Unit: m²
The rates shall cover the cost of replacing cast concrete paving or precast concrete blocks (whichever is applicable) to the satisfaction of the Engineer.

PA8.2.5 *Make good for breaking up and removing paving blocks* Unit: m²
The rates shall cover the cost of replacing paving blocks to the satisfaction of the Engineer.

PA8.2.6 *Make good for breaking up and removing all types of tiles* Unit: m²
The rates shall cover the cost of replacing all types of tiles to the satisfaction of the Engineer.

PA8.2.7 *Make good for breaking up and removing all types of brickwork* Unit: m²
The rates shall cover the cost of replacing all types of brickwork to the satisfaction of the Engineer.

PA8.2.8 *Preparation and delivery of notice to owner* Unit: No.
This rate shall cover the preparation and timeous delivery of notice to the owner of the property for all on property intervention activities. Only 1 payment per stand will be made irrespective of number of notices issued to resident.

PA 8.2.9 *Standpipe (LOS2) provision and installation* Unit: No
The rate shall include the cost for the provision, assembly and installation of stand pipes with all couplings complete including all pipework, bends and fittings (as per applicable detail drawing), cutting into pipes of all material and size (up to 25mm diameter) excavation in all materials, backfilling and compaction to 90% Mod AAHSTO minimum.

PA 8.2.10 *Stand pipe (LOS2) installation from temporary storage* Unit: No
The rate shall include the cost for the provision from storage and installation of stand pipes with all couplings complete including all pipework, bends and fittings (as per applicable detail drawing), cutting into pipes of all material and size (up to 25mm diameter) excavation in all materials, backfilling and compaction to 90% Mod AAHSTO minimum.

PA 8.2.11 *Stand pipe (LOS2) removal and storage* Unit: No
The rate shall include the cost for the removal, handling, transportation and temporary storage of the standpipe with all couplings complete including all pipework, bends and fittings (as per applicable detail drawing), cutting into pipes of all material and size (up to 25mm diameter) excavation in all materials, backfilling and compaction to 90% Mod AAHSTO minimum.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PA 8.2.12 Illegal erf/yard connections and/or bypasses locating and removal. Unit: m

The rate shall include the cost for locating, exposing, disconnecting, plugging of illegal connections; including excavation in all materials, cutting into pipes of all material and size (up to 25 mm diameter), backfilling and compaction.

PA 8.2.13 Yard connection provision and installation. Unit: No

The rate shall include the cost for providing and installing yard connections for the listed length increments, including connection couplings to pipes of all material, pipe sizes up to and including 25 mm and shall be all-inclusive for items as per the applicable detail drawing, for:

- a) 0 – 10 m,
- b) 0 – 20 m, and
- c) exceeding 20 m.

PA 8.2.14 Locating and expose meter bypass on existing yard connections Unit: m

The rate shall include the cost for locating, exposing through excavation in all materials, assessing the condition of the pipe by visual inspection, backfilling, compaction to 90 % Mod AASHTO density and reporting on findings to the Engineer.

PA 8.2.15 Locating and assessment of existing yard connections. Unit: m

The Contractor shall locate, expose and assess the condition of all existing yard connections. Depending on the extent of the damage or deterioration, connections shall either be repaired or completely replaced as per Schedule F of the Works. Replacement, and thus payment, shall only be executed with the prior approval of the Engineer. Where no such approval was obtained the Contractor shall not be reimbursed by the Employer nor allowed to remove such connection and shall re-instate such site to its original status at the cost.

The rate shall include the cost for locating, exposing through excavation in all materials, assessing the condition of the pipe by visual inspection, backfilling, compaction to 90 % Mod AASHTO density and reporting on findings to the Engineer.

PA 8.2.16 Locating and disconnecting of existing water supply. Unit: /Stand

The Contractor shall in some circumstances be required, on instruction of the Engineer, to disconnect existing customers by locating and securely disconnecting the joint between the erf and yard connection within the road reserve. Such activity shall be required for pipes of various materials and for diameters up to and including 25mm.

The rate shall include the cost for all resources and materials, preparation work (locating and excavation) and the execution of the activity as described above and the re-instatement of the excavation through backfilling, compaction, leveling and cleaning.

PA 8.2.17 Locating and re-instatement of existing yard connection where disconnected.Unit/Stand

The Contractor shall in some circumstances be required, on instruction of the Engineer, reinstate existing customers by locating and connecting the joint between the erf and yard connection within the road reserve. Such activity shall be required for pipes of various materials and for diameters up to and including 25 mm.

The rate shall include the cost for all resources and materials, preparation work (locating and excavation) and the execution of the activity as described above and the re-instatement of the excavation through backfilling, compaction, levelling and cleaning.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PA 8.2.18 Leak detection. Unit: No

New leakages on erf and yard connections shall be detected utilizing the best suited or combination of approved methods available, by the Contractor.

The rate shall include the cost for all resources and materials, preparation work (locating and excavation) and the execution of the activity as described above and the re-instatement of the excavation through backfilling, compaction, levelling and cleaning.

PA 8.2.19 Leak free test Unit: No

Leakage detection tests shall be performed for a minimum duration of 5 minutes, utilizing the best suited or combination of approved methods available, by the Contractor.

The rate shall include the cost for all resources and materials, preparation work (locating and excavation) and the execution of the activity as described above and the re-instatement of the excavation through backfilling, compaction, levelling and cleaning.

PA 8.2.21 100% Pre-intervention on-property survey..... Unit: /Stand

The rate shall include the cost for all resources (at least one qualified plumber per survey team), the execution of the activity as described above, the proper documenting of the results in a format that is agreeable to the Engineer and the forwarding of such information on regular intervals to the Engineer.

PA 8.2.22 Water closet (WC) pans. Unit: No.

The rate shall include the cost to supply, transport, handle, removal of existing (if any) and disposal, installation and testing of pans and cleaning of work area in accordance with clause PA *** above.

PA 8.2.23 Water closet (WC) cistern and flushing mechanism Unit:

No. The rate shall include the cost to supply, transport, handle, removal of existing (if any) and disposal, installation and testing of cisterns and cleaning of work area in accordance with clause PA **. Allowance is made for:

- a) plastic, and
- b) porcelain.

PA 8.2.24 Water closet (WC) cistern peripherals Unit:

No. The rate shall include the cost to supply, transport, handle, remove existing (if any) and dispose off, installation and testing of new cistern peripherals and cleaning of work area in accordance with clause PA **. Allowance is made for:

- a) cistern-pan connection; flush pipe,
- b) flexible cistern tank supply connection, and
- c) black rubber cone.

PA 8.2.25 Draw-offs (taps) and stop taps (also known as stopcocks) provisional sum

(a) Draw-off (taps) and stop taps.. **Unit: Prov Sum.**

Provisional Sum for the supply of draw-offs and stop-taps requirements, such as bib taps, pillar taps, washers and ball stop taps to facilitate the successful installation of new or replacement of existing items not measured elsewhere and approved by the Engineer. Where such items are listed in other Schedule G of the Works such rates shall be applicable for the provision and installation of such required items, alternatively the percentage compensation method shall be applicable.

The Contractor shall be required to produce the original invoice/s from the supplier and submit a copy thereof attached to their payment certificate. In addition, the Contractor shall on their compulsory list for on-property intervention, provide full measured details of toilet structure intervention per stand for the on-property post-intervention verification survey.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

b) Extra-over item for draw-offs and stop-taps **Unit: %** The Contractor shall be compensated in full (thus all inclusive) for the removal of the dysfunctional item/s and the installation of the new replacement item/s and all other incidentals to successfully facilitate the installation, including profits, as a percentage of the supply cost of the materials. If full details are not provided on the intervention and materials required, as detailed above, no payment will be made until such detail is provided.

The percentage shall include the complete cost to facilitate the installation of any intervention, including overheads and profits, not measured elsewhere for this Contract, for material types as norm and all sizes: a) Draw-offs

- i) Bib-taps
 - 1) External taps
 - 2) Internal taps
- i) Pillar tap
 - 1) External taps
 - 2) Internal taps
- a) Mixers
- b) Stop taps
- c) Rubber washers

PA8.2.26 Plumbing fittings Unit: No.

The rate shall include the cost to supply, transport, handle, removal of existing (if any) and disposal, installation and testing of fittings and cleaning of work area in accordance with clause PA **. Allowance is made for the following to be replaced with specified material types:

- a) Equal tees for diameters up to 40 mm
- b) Unequal tees for diameters up to 40 mm
- c) Reducing bushes for reducing from maximum 40 mm to 15 mm diameter
- d) Bends/elbows for diameters up to 40 mm

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PD EMPLOYMENT AND TRAINING OF LABOUR

PD1 SCOPE

This specification covers the requirements for the employment and training of workers on the Contract.

PD2 COMMUNITY LIAISON OFFICER

The Project Steering Committee will identify a Community Liaison Officer (CLO) to facilitate liaison between the Contractor and the community and amongst other things to ensure that the employment of local labour proceeds smoothly.

All decisions regarding identification and hiring of labour, relieving labour of their duties, local problems and any other matter of local importance related to the Contract, will be made in consultation with the CLO.

PD2.1 APPOINTMENT, OFFICE AND REPLACEMENT OF CLO

- The CLO will be appointed for the duration of the construction phase of this Contract.
- The CLO will occupy his own office in the Contractor's camp from where he will fulfil his duties to identify, screen and nominate labour from the community in accordance with the Contractor's requirements.
- The CLO will communicate with the Contractor daily regarding labour requirements.
- Should it become apparent that the appointed CLO fails to meet his duties, he may be relieved from his duties and replaced by a new CLO in consultation and approval with the Project Steering Committee.
- One CLO will be appointed per ward from the time that work starts in that ward until all work in that ward has been completed.

PD2.2 DUTIES OF THE CLO

- He will attend all meetings of the committee pertaining to this Contract.
- He will be available on site daily between the hours of 07:30 and 18:30, and at other times as the need arises.
- He will consult with the Contractor and the Engineer daily to determine the labour requirements regarding amount and skills, to identify possible labour disputes, and to inform local labourers timeously when they will be relieved.
- He is responsible to screen candidates, to inform them of their conditions of temporary employment and to ensure their timeously availability.
- He will ensure that all workers who are involved in activities where productivity rates have been agreed, are fully informed regarding the expected level of productivity for the given tasks to be assigned as part of this Contract.
- He will attend disciplinary proceedings to ascertain that hearings are fair and reasonable.
- In consultation with the Contractor, he will determine the needs of the local labour for relevant technical training. Again he will be responsible for the identification of suitable trainees. He will also be required to attend some of the training sessions.
- He will keep a daily written record of his interviews and community liaison.
- He will attend the first part of the monthly Contractual site meetings to report about the local community labour involvement as well as any other relevant problem that needs attention.
- He will liaise regularly with the Project Steering Committee to ensure that their co-operation is obtained and their decisions accommodated. He will thus act as a liaison officer between the Contractors on site and the local community through the project committee. - He will be involved in all SMME related matters (Contracts, terminations etc)

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

Contract JW14335
Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase 2

Volume 1 – Contract
Section C3 – Scope of Work

PD2.3 SCHEDULED ITEM

- PD2.3.1a *Community Liaison Officers - Salaries* **Unit: Provisional Sum**
The tendered sum shall include full compensation for the provisions of the 2x CLOs including salary, provision of an office, transport costs, the cost of typing, printing and distributing notices, and for all other obligations described in Clause PE2.2.
- PD2.3.2b *Community Liaison Officers – Cellular phone* **Unit: Provisional Sum**
The Contractor must the supply the 2x CLOs with a cellular phone for the duration of the CLO employment Contract and this rate must cover the cost of procuring and commissioning that phone.
- PD2.3.2c *Community Liaison Officers – Cellular phone calls*..... **Unit: Provisional Sum**
The Contractor must allow R 500,00/ month per CLO for work related calls. Calls above this amount will be for the CLO account.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PE STS METER TECHNICAL INFORMATION & SPECIFICATION

PE1 SCOPE

This specification covers the STS meter specifications and requirements from the Contractor's meter supplier on this Contract.

PE 1.1 General Information

PE1.1.1 References

PE 1.1.1.1 The following references contain provisions that apply to the specification and technical requirements of water meters in terms of this tender. The references will be deemed to be the latest edition or revision. Information on currently valid national and international standards may be obtained from the South African Bureau of Standards.

The standards and references have been used to emphasize Legal Metrology Act 9 of 2014 and its technical requirements issues and have also been used as a guideline in preparing this document. This document does not in any way intend to supersede the applicable provisions of the requirements of Legal Metrology, Act 9 of 2014 and its technical requirements.

SANS 1529-1

Specification: Water meters for cold potable water Part 1: Metrological characteristics of mechanical water meters of nominal bore not exceeding 100 mm.

- i. The meters and associated equipment shall be manufactured in accordance with such requirements.
- ii. Meter accuracy shall be a Class C meter.
- iii) Legal Metrology Act 9 of 2014 and including the following accreditations:

SANS 1529-9

Water meters for cold potable water

Part 9: Requirements for electronic indicators used with mechanical water meters, electronic water meters and electronic prepayment water measuring systems.

IEC 62055-41 and IEC 62055-51 in terms of prepayment tokens

Legal Metrology Act 9 of 2014 and its Technical requirements

PE1.2 PREPAYMENT WATER METER WITH STS FUNCTIONALITY SPECIFICATIONS

PE1.2.1 STS Meter Compliance

- a) All meters must be tested in a South African National Accreditation System (SANAS) accredited verification laboratory in compliance with Legal Metrology Act 9 of 2014 and its technical requirements.
- b) The meter shall be approved by the National Regulator for Compulsory Specifications (NRCS),
- c) Delivered with individual Verification Certificate,
- d) Verified by a NRCS designated and SANAS accredited laboratory for 1529-9,
- e) Monetary value calculations to be documented in the Verification Certificate,
- f) Verification Officer conducting verifications must be certified by NRCS for 1529-9,
- g) Meters to have the capability to switch from conventional mode to prepaid mode remotely.
- h) The meter must be fitted with internal strainer, non-return valve and shut off valve
- i) **Meters must be STS edition 2 ready as per STS Association TID roll over**

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PE 1.2.2 Verification Certificate shall indicate the following

- a) Title “ verification certificate”
- b) The name, address and designation number of the verification body,
- c) A unique serial number on all its pages to identify that each page is recognised as part of verification certificate,
- d) Page numbers and clear identifier of the number of pages in the verification certificate e.g. page 1 of 1 or a statement at the beginning of the certificate “ this certificate consists of 1 page” or a statement at the end of the certificate “ End of Certificate”,
- e) The name and address of the client,
- f) The number of the procedure used by the verification body,
- g) A description and unambiguous identification of the measuring instruments verified, including description and serial number of components that has an influence on the metrological integrity of the measuring instrument and the type approval number of the instrument or components, if the measuring instrument requires type approval in items of section 22 of the Act;
- h) A statement that will serve as a proof that the measurement standards used are directly related to the reading or obtaining of the results of measurement and are traceable to a national standard .
- i) The initial, surname and signature of the verification officer responsible for the verification, serial number , date of verification and seal number
- j) The following statement “the measurement was tested and found to comply with all respects with the requirements of the Legal Metrology Act, 2014 (Act No.9 of 2014) and may be used for a prescribed purpose as intended by the act.”
- k) A symbol identifying the regulatory body

PE 1.2.3 Meter Markings

- Each water meter shall be clearly and indelibly marked with the following information
- Manufactures name or trade name or registered trade mark and model of the meter
- Permanent flow rate, in cubic meters per hour
- Unique serial number
- Direction of flow, applied to the body of the meter and indicated for example by an arrow and letter H or V where applicable.
- An identification mark to indicate type approval (South African approval number)
- Metrological class C
- Nominal working pressure in KPa
- Pressure loss (either the group, or in kilopascals)

PE 1.2.4 Meter Box

- The hinged cover of the water meter dial shall not be used for this purpose nor shall these markings be on any material that can degrade with time and cannot withstand harsh environmental conditions.
- The meter serial number should be readable from the same position as the dial.
- The meter must be of either a volumetric, multi-Jet or ultrasonic type
- Automatic shut-off flow when a temper event is censored.
- The meter must be Standard Transfer Specification (STS) approved and certified.
- Meter minimum battery life span of 5 years life expectancy and shall commence once meters have been approved by JW's Flow Lab.
- Meter to have a remote communication functionality through Advance Metering Infrastructure (AMI) system.
- Housing options: Pillar box, above ground unit with the necessary plumbing for easy replacement of existing meters.
- Prepayment tokens to use numeric tokens compatible to IEC 62055-41, IEC 62055-51
- Meters must be compatible to the latest STS edition as per STS Association TID roll over.

PE1.2.5 Functionality

- a) Prepayment mode.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- b) Two –way communication between the meter and vending platform
- c) Full calendar clock
- d) Remote reading of all meter alarms including battery and tamper alarm
- e) Tamper alarm shall be time stamped
- f) Consumption and available credit readings
- g) CIU control and keypad input
- h) STS number to be displayed on the meter box or meter display**

PE1.2.6 CONSTRUCTION

- a) Robust construction
- b) Preferably no brass should be used
- c) Physical tamper protection
- d) Magnetic tamper proof
- e) Entry pipe 15-25mm
- f) Environmentally sealed
- g) Field replaceable battery with at 5 years lifespan
- h) Meter to be supplied complete with all fittings and couplings.** Inlet & outlet couplings to be supplied with each meter.
- i) The meter box must be manufactured from a UV stabilized engineering plastic conforming to SANS 967, with a minimum 5mm wall thickness.
- j) The Prepayment Meter pillar box must be at least 700mm in height and the below ground installation section must be at least 250mm from the base of the pillar box

The above ground meter box should comply with the following requirements;

- k) When installed, the meter shall be capable of supporting the imposed loads that are expected to be applied to surface box installation, such as a person sitting on it. The design of the assembly shall ensure that all vertical load distribution is achieved without due deformation of the main body of the meter box or its components and that no stress is directly transmitted to the connecting pipe work.
- l) The base of the pillar-box must be sealed to prevent soil and water ingress.

PE1.2.7 Data Storage

- a) Consumption registers
- b) Hourly consumption profile
- c) Tamper log (time tagged)
- d) Prepayment token log
- e) Alarms e.g. battery, leaks detected
- f) Tariff information
- g) Used water dispensed
- h) Remaining water

PE1.2.8 CIU (Customer Interface Unit)

Every supply point shall be equipped with a customer interface unit as a communication device. This unit shall be mounted in the customer residence and shall have the following capabilities:

- a) Display consumption volumes in KL for the relevant customer's meter
- b) Display remaining water credit.
- c) Keypad to enter numeric credit token
- d) Have a dustproof keypad
- e) Be user friendly with simple uncomplicated start up and shut down procedures
- f) Have a built in battery
- g) Have a battery with a warranted life of no less than 5 years powering the CIU.
- h) Tamper Icon
- i) Meter Totalizer
- j) Battery low icon
- k) Valve open or closed icon

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- l) Free Water available in KL
- m) Free Water Used in KL
- n) Meter Lock (close valve)
- o) Messages from the utility
- p) Payment history information
- q) Water leak indicator

PE1.2.9 CONTROL VALVE (open /close)

- a) A shut off valve will be fitted on every meter.
- b) Remote control from meter or concentrator
- c) Cleanable filter element
- d) Valve should be protected against tampering.
- e) Valve should shut off in tampering, remote shutoff, as well as prepayment credit depleted cases.

PE2.2 SPECIFIC REQUIREMENTS

PE2.2.1 METER KEY PERFORMANCE INDICATORS (KPI)/DESCRIPTION FAILURES

The Meter shall have a KPI monitoring capability that allows for tracking of:

- a) Software issues (tampering, information transfer time);
- b) Operational issues (including: wrong CIU, inlet blocked, no credit, retrofitting problem, did not roll-over and type error);
- c) Pipe work issues (isolation valve leaks, possible user plumbing leaks, and compression fittings);
- d) Meter issues (not opening, not closing, flat battery, choking, not displaying, liquid crystal display defect, chattering, pick-up, CIU contact, and leak).

KPI tracking and reporting shall commence within 1 month from date of installation of first Contract supplied-meter and shall be updated on a monthly basis until the end of the Contract Period of Performance.

PE2.2.2 TRANSGRESSOR IDENTIFICATION

The meter shall have the intrinsic ability to indicate a potential transgressor, based on a percentage deviation from previous record data, such as consumption and purchase profile. The administrator shall be able to adjust such percentage (degree of deviation) as-and-when required.

PE2.2.3 ENVIRONMENTAL SPECIFICATIONS

- a) Operating temperature range as prescribed in the SANS 1529-9.
- b) IP 68 compliant

PE2.3 METER AND METER BOX UNIT (Pillar box)

PE2.3.1 METER PILLAR BOX

The Pillar box shall include plumbing fittings (including all pipe sections and an isolation valve, etc), connectors, the meter and the meter box.

PE2.3.1.1 Meter Drawing

The Supplier shall provide detailed drawing(s) of the Pillar box inclusive of any special drainage requirement. The designed and approved meter installation position shall be clearly indicated on such drawing. Drawing(s) shall:

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- a) Have a scale and be drawn to such scale.
- b) Clearly indicate all the components of the Pillar box supplied by the Supplier.
- c) Be provided for above ground installation.

PE2.3.1.2 Fittings and Connections

The Supplier shall ensure that:

- a) The meter shall be complete with push-fit type inlet and outlet fittings for 15-25mm HDPE pipes for domestic connections;
- b) All fittings and connections inside and outside the Pillar box are free from leaks, pressure tested and passed to a minimum of 20Bar.
- c) A strainer and a isolation valve are included in the fittings. The valve shall be:
 - Ergonomically and accessible; and
 - Robust yet easy to open or close.

Should the valve be found not to comply with these requirements the Employer shall have the right to request the immediate replacement of the valve at the complete cost (labour, transport and material) of the Supplier. The replacement process shall not inconvenience the Employer's customers and the Supplier shall reirse any income lost as a result of the non-complying valve, including the replacement process.
- d) All push-fit connectors, valve and strainer shall be supplied preassembled with the meter in the Pillar box.

PE2.3.1.3 Meter Unit Encasing

The Supplier shall ensure that:

- a) the meter box design, fittings and connections are suitable to accommodate the meter design. There shall be no movement of meter on the horizontal and vertical planes outside a tolerance 1.5mm. Where movement in excess of the maximum is found the Employer shall require the immediate replacement of such Pillar boxes at the expense of the Supplier. The replacement process shall not inconvenience the Employer's customers and the Supplier shall reimburse any income lost as a result of the non-compliance, including the replacement process.
- b) the meter box lid shall:
 - i) be lockable by means of customer individual lock.
 - ii) be securely attached to the rest of the meter box at the hinges. Meter box lids shall be deemed defective where the lid is easily separated from the rest of the meter box, in the opinion of the Employer, and the complete unit shall be returned to the Supplier for rectification at his cost.
 - iii) be either completely constructed of a reflective material or have a reflective feature which will facilitate locating the meter in the dark and poor lighting conditions.
- c) the meter box material is robust when considering strength requirements, in light of the potential of vandalism.
- d) drainage of meter box is appropriately accommodated in accordance with the IP rating of the associated meter
- e) he shall fully disclose where the design, manufacturer and assembly of the meter box, fittings and connectors be sub-contracted by the Supplier. The Employer reserves the right to inspect such sub-Suppliers/s facilities. The Supplier shall remain fully responsible for any quality assurance issues or delays that may arise from such sub-supplier/s. Failure in this regard shall result in the application of associated penalties.

PE2.4 METER

PE2.4.1 General

Supplied meters shall:

- a) of a non-keypad-operated type, to ensure automatic two-way transfer of data.
- b) housing designed and constructed to effectively and efficiently house and protect all electronic components.
- c) electronic components shall be water resistant to minimum an IP67 rating.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

- d) Supplied meters shall be able to withstand a normal working pressure of at least 1600Kpa.

PE2.4.1.2 Branding and Labelling

Labelling on meters shall:

- a) Durable, for example by means of a meter serial number engraved on the meter. The Supplier shall further provide other important information as required by SANS 1529-9 to be provided on the label.

PE2.4.1.2 Meter Battery

JW requires a meter:

- a) Which has a battery with a warranted life of no less than 5 years powering the meter.
b) That can incorporate alternative power sources, which are more environmentally friendly, as additional power supply.
c) That can actively monitor the battery voltage level.
d) With easy battery replacement, in particular without the need to break the verification seal.
e) Safety alerts to be displayed where the battery is located on the meter body.

PE2.4.1.3 Meter Error Messages Display

PE2.4.1.3.1 Meter display (Liquid Crystal Display (LCD))

- i) The correct sequence of displayed information shall be decided in conjunction with the Employer.
ii) The information shall preferably be preceded by a short description.
iii) A scroll-down cycle time of 70 seconds shall be provided, however, if this cannot be complied with then an incremental time of minimum 10 seconds shall be accepted. The final scroll-down cycle time shall be agreed with the Employer before the first batch of meters is delivered to the Employer.
iv) ICONS are preferred instead of lengthy description.

PE2.4.1.3.2 Capable of presenting important values or text on the LCD that change in relation to consumption in flickering/flashing style.

PE2.4.1.3.3 Capable of displaying the following information, but not limited to and not necessarily in the same sequence, when the meter is activated:

- i). Poor CIU contact error messages, wrong CIU error message, and wrong operational area error message.
ii). Low battery or flat battery error message.
iii). The current and previous month-end meter reading.
iv). Meter's locking status shall be displayed when the CIU is introduced to the meter.
v). Total credit currently on meter in kiloliters value.
vi). Total Volume of purchased water available in litres for the equivalent Total Credit on the meter in Rand value relative to the applicable tariff level that the customer is on at a particular time of the month. This value shall change in relation to the transgression of consumption and progression on the tariff table.
vii). A possible or probable leak message displayed to the customer for minimum the last 6 months
viii). All meter errors or faults shall be displayed as descriptive messages and not error codes. The errors messages proposed by the Employer are included in the table below.

Table 1: Error Messages and ICONS

NO.	ERROR MESSAGE/WARNINGS ON DISPLAY	Description/Action/ICON
1	MEASURING TRANSDUCER	Transducer problem
2	LOW BATTERY	Low power battery warning
3	FLAT BATTERY	Flat battery warning
4	MAGNETIC TAMPER	Magnetic interference
5	PHYSICAL TAMPER	Meter penetrated
6	BAD CIU	Corrupt CIU
7	INCORRECT METER	Wrong CIU to meter

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

NO.	ERROR MESSAGE/WARNINGS ON DISPLAY	Description/Action/ICON
8	INCORRECT AREA	Wrong area CIU
9	POSSIBLE INTERNAL PROPERTY LEAK	Property Leak
10	PURCHASED CREDIT UTILISED	Credit Already Allocated
11	VALVE CLOSED	No water supply
12	SPECIAL CASE CUSTOMER IDENTIFIER	Indigent customer to be identified by the meter and at Point of Sale
13	MISTRANSACTION CODE	Any transactions not transferred to the meter
14	DEACTIVATED CIU	This is for a blacklisted CIU

PE2.4.1.3.4 Defective meters

A defective meter shall be replaced at the suppliers cost if it cannot be repaired on site for whatever reasons, the Employer shall require the following carried out at the supplier's cost:

- The new meter be paired with the CIU.
- The customer information be collected for uploading onto the vending platform.

PE2.4.1.3.5 Tampering

PE2.4.1.3.5.1 Meter Tampering

The Employer requires a meter unit with:

- Hardware and software components that are completely protected or sealed to prevent any access or tampering to the meter.
- Anti-tamper features, which shall prevent the illegal removal of the meter cover (or housing) or meter unit, illegal bypassing or vandalism of the meter. Where special screws or bolts are used, these shall not be able to be extracted using standard commonly available screwdrivers, allen-keys and spanners.
- Software capable of indicating, whether such meter has been tampered.

PE2.4.1.3.5.2 Special Anti-Tampering Features

The Employer further requires that the Supplier provides additional visual tampering features that will allow the Employer's staff to immediately determine whether the meter or Pillar box had been tampered with. Such features shall:

- serial number;
- Have a bar coded
- Not be easily removed; and
- When removed not be able to be reinstated to its original and proper installation state.

PE2.4.1.3.5.3 Meter Tampering Recording and Reporting

The Employer requires that tampering be recorded and reported in the following sequence:

- Meter:
 - Software and hardware shall be capable of sensing and recording (including the date, time, and the type of tampering) all tampering activities; and
 - Software and hardware shall be capable of transferring tampering recordings to the customer CIU each time such is introduced to the meter.
- Customer CIU:
 - Software and hardware shall be capable of downloading and storing all tampering activities from the meter; and
 - Software and hardware shall be capable of transferring tampering recordings to the back-end platform via the IOT.

PE2.5 METER COMPATIBILITY

Meters shall be compatible to JW vending platform and the supplier shall make available their unique encryption code (SGC) available to the vending platform developer to enable a two-way communication between the Supplier's device and the platform.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PE2.5.1 Advance Metering Infrastructure (AMI)

The Employer requires an AMI system component that is incorporated in the meter and has been track-proven with respect to reliability and accuracy and the Meter communication protocols to be shared with Johannesburg Water.

Further, at minimum the AMI component system shall:

- have components that are ‘universally compatible’ and thus essentially not of a proprietary nature, ensuring compatibility with other systems on the market.
- have components that are designed and manufactured to an IP rating similar or higher than the associated meter.
- be capable of sending and receiving data, ranging from meter reading, water type, credit, consumption profiling, errors, tampering alerts and battery life as recorded on the meter.
- have a transmitter in the meter capable of sending and receiving a secured signal to and from a ‘walk-by’ or ‘drive-by’ type transmitter and receiver travelling at minimum 20km/h and maximum 60km/h.
- have no limitations in respect of line-of-sight, and should be able to collect and send data up to a distance of minimum 50m.
- protect all meter stored and sent data all times, ensuring 100% accuracy and security, thus there shall be no possibility to illegally and without authorisation remotely access the meter or data whilst in transit.
- capable of remotely locking and opening the meter solenoid valve.
- not in any way interfere with normal and primary functions of the meter.

PE2.5.2 NON- INTRUSIVE METER SOFTWARE UPGRADING

The Employer requires that the Supplier provide non-intrusive method(s) or process (es),

NOTE: not only limited to AMI capability to facilitate future update or installation software to meters already installed or within the stores of the employer, without:

- a) affecting the metering ability or functionality of the meter unit;
- b) affecting the accumulative record data required to be stored on the meter; and
- c) requiring the removal of the installed meter.

PE2.6 METER USER GUIDE

The Supplier shall provide a comprehensive meter user guide per component (limited to the vending platform, CIU and Pillar box) in the following three official languages: English, and two local languages (e.g. Zulu, Sesotho, Xhosa, Afrikaans, etc.). Such guide shall be updated during the Contract Period of Performance, as the meter is changed, and a final version copy (in hard and soft (PDF) format) shall be made available to the Employer on issue of the Contract Completion Certificate.

The Supplier, in consultation with the Employer, shall develop and present guides to the Employer for final acceptance within 20 days from the Contract Commencement Date. The guides shall explain the installation, operating and maintenance requirement for each meter components in addition to any error messages and any associated customer action required.

The Supplier shall provide professionally printed information holders to hold all manuals, guides and leaflets to be handed to customers, trainees and others. Such holder shall:

- a) be of a A4 plastic pocket type;
- b) be capable of holding at least 20 A4 pages, be of high quality and durable material;
- c) be transparent;
- d) contain on the front the Employer’s name and logo, JW & CoJ name and logo
- e) contain on the back Employer’s customer centre contact details.

No details of the Supplier shall be provided on the holder and the Employer shall approve the final layout of the holder.

Volume	1	2	3				
Part	T1	T2	C1	C2	C3	C4	

PE2.7 DELIVERY

- a) Delivery of all goods shall be at the project site camp in accordance with a phased schedule of the Contractor's programme.
- b) No meters or Pillar boxes that do not meet the National standards or the Employer's requirements shall be delivered to the Employer's designated Depot stores.
- c) Approved illustrative 'user manuals' shall be included in the packaging with each Pillar box or meter. The operating instructions are to be in English, and two local Contract Area languages (e.g. Zulu and Sesotho). Details and finalization of such manuals shall be agreed with the Supplier, however such finalization of the content and layout shall be concluded, with the Employer, at least one week before the first meter is replaced under this Contract.
- d) During deliveries, concise delivery records and/or notes shall be required so that batch differentiation is possible to assist in the location of all such components in case of faults/problems and the correct determination of penalty amounts. The delivery note from the Supplier shall include an electronic inventory list of all accompanying meters. This electronic file shall be:
 - i. compliant to a common standard prescribed by the Employer; and
 - ii. able to be imported into the vending platform and/or any software program used by the Employer to record his assets.
- e) He shall provide all labour and equipment for the off-loading of goods, as the Employer's staff shall not be responsible to assist the Supplier with this activity.
- f) Prior to the delivery of the goods, arrangements shall be made by the Supplier for Employer representative to be present to receive the relevant documentation that is necessary for invoicing purposes.
- g) Deliveries of goods shall be made by road transport to the relevant sites. It shall be the Supplier's responsibility to familiarize him with the Contract area to establish the suitability of his vehicles and travel routes.
- h) He shall be held responsible for any damage caused to the Employer's property i.e. roads, kerbs, gates, etc. during delivery goods. Any repairs to damaged property shall be carried out within seven days after notification by telephone or facsimile by the Employer.
- i) On delivery of the ordered meters, the Flow laboratory will inspect all meters for compliance by checking the marking requirements/ damages and take a random sample for subsequent verification.
- j) Meters will be reported as passed or failed when they comply with the Legal Metrology Act 9 of 2014 requirements or when they do not comply with the Legal Metrology Act 9 of 2014 requirements.
- k) Where there is failed meter(s), the batch will be rejected and the Supplier will be informed to collect the batch at their cost for replacement with a new batch.
- l) Once the same batch fails legal Metrology Act 9 of 2014 compliance three (3) times, the entire order will be rejected.

PE2.8 METER REPAIR

It is noted that for reasons of security, concealment and quality control **NO PHYSICAL REPAIRS ON THE METERS AND/OR PILLAR BOXs SHALL BE EXECUTED AT THE EMPLOYER'S DESIGNATED STORES OR ON A CUSTOMER'S PREMISES WHERE PILLAR BOXES ARE CURRENTLY ALREADY INSTALLED AND OPERATIONAL**, specifically where such is deemed defective after installation/use, such a meter shall be returned to the Supplier and a defective meter replaced with an approved non-defective meter.

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

PE2.9 GUARANTEE

The Maintenance period for the meter is 12 months (12months Guarantee). Effective from the date of switching of the meter from open mode to prepaid mode on Customers property.

PE2.10 METER QUALITY REPORT

The Supplier shall provide a quality report for each meter with the deliver note provided in respect to this Contract. Should such report be omitted for any component, the Employer shall return such component at the expense of the Supplier.

The report shall contain 100% of meter delivered verification certificate upon delivery of every order placed, soft copies of the certificates shall be made available upon delivery to the Employer.

PE2.11 FORMAT OF COMMUNICATIONS

All Contract communication shall be in English and in writing.

PE2.12 STAFF IDENTIFICATION

The Employer requires that all support staff, when on duty, at all times wear identification badges clearly identifying such staff members or as an employee of the Supplier and a service provider to the Employer.

PE2.13 TRAINING

The Supplier shall provide a well detailed and documented training course to Johannesburg Water staff, customers and other relevant stakeholders, as and when required. The training will cover the following listed below:

The course must cover the Supplier's STS meter functionality but not limited to the topics listed below:

- a) Meter/ valve and CIU installation in accordance with SANS 1529 requirements / testing
- b) Fault location and repair
- c) Meter errors and rectification
- d) Credit loading & checking and leakages
- e) Meter reading processes
- f) Any other relater training requirements

PE2.14 INTERNET OF THINGS (IOT)

The Supplier's meters shall have inbuilt IOT modules for the transmission of data from the meter to the system and from the system to the meter (M2M). The Supplier's meter must be able to perform the following:

- a) integrate between the meter device and JW STS vending platform and vice versa
- b) to have an uninterrupted wireless connectivity,
- c) ability to process & transmit information from the meter to the vending platform including all alarms and data recorded by the meter.
- d) ability to store meter data
- e) Meter must be programmable to the applicable network service provider.

PE2.15 TESTING OF METERS

The JW Flow Laboratory will sample each batch of water meters delivered for testing/ verification and will be reported as batch passed or failed. When the batch has passed, it will be accepted and in the event one or more meters fail the test, the batch will be rejected. The supplier will therefore collect the failed batch and replace with another batch of water meters and the process of for testing/ verification will restart.

PE2.16 PAYMENTS

Volume	1	2	3			
Part	T1	T2	C1	C2	C3	C4

Contract JW14335
 Supply and Installation of STS Prepayment Water Meters in Cosmo City -Phase 2

Volume 1 – Contract
 Section C3 – Scope of Work

Payments for delivered and tested meters will only done for approved meter batches by JW 's Flow Lab.