

INVITATION TO BID
TENDER COVER PAGE

YOU ARE HEREBY INVITED TO BID FOR THE REQUIREMENTS OF JOHANNESBURG WATER

BID NUMBER: JW OPS 032/22

CLOSING DATE: 31 AUGUST 2022

CLOSING TIME: 10:30

DESCRIPTION: KIBLER PARK SEWER PUMP STATION UPGRADE

CIDB REQUIREMENTS: TENDERERS SHOULD HAVE A CIDB CONTRACTOR GRADING DESIGNATION OF 3EB AND 2ME OR HIGHER.

NOTE: HARD COPY TENDER DOCUMENTS ARE AVAILABLE AT A COST OF R350 PER SET. DOCUMENTS DOWNLOADED FROM THE E-TENDER PORTAL ARE AT NO COST BUT MUST COMPLY WITH SUBMISSION REQUIREMENTS (NEATLY BINDED AND WITH NO PAGES MISSING).

DOCUMENTS MAY BE COLLECTED DURING WORKING HOURS FROM SUPPLY CHAIN MANAGEMENT UNIT, JOHANNESBURG WATER, TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN.

BIDDERS ARE ENCOURAGED TO ATTEND A NON-COMPULSORY TENDER BRIEFING SESSION ON MICROSOFT TEAMS: 04 AUGUST 2022 AT 11:00 TO 12:00 LINK IS AVAILABLE ON JW WEBSITE ADVERT.

BID DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT GROUND FLOOR:

TURBINE HALL

65 NTEMI PILISO STREET

NEWTOWN

JOHANNESBURG

2001

SUPPLIER INFORMATION			
NAME OF BIDDER			
POSTAL ADDRESS			
PHYSICAL ADDRESS			
TELEPHONE NUMBER			
CELLPHONE NUMBER			
E-MAIL ADDRESS			
VAT REGISTRATION NUMBER			
TAX COMPLIANCE STATUS	TCS PIN	CSD No	
CIDB CRS NUMBER			
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]			
The 80/20 point scoring system will be applicable to this tender, i.e.80 points for Price and 20 points for Preferential procurement (BBBEE).			
TOTAL NUMBER OF DOCUMENTS/VOLUMES SUBMITTED			
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	Supply Chain Management	DEPARTMENT	Operations
CONTACT PERSON	Nthabiseng More	CONTACT PERSON	Nosipho Mokoena
TELEPHONE NUMBER	011 688 1512	TELEPHONE NUMBER	011 688 1585
E-MAIL ADDRESS	nthabiseng.more@jwater.co.za	E-MAIL ADDRESS	nosipho.mokoena@jwater.co.za

TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

- 1.1. BIDS MUST BE DELIVERED TO THE CORRECT ADDRESS BY THE STIPULATED TIME. LATE BIDS WILL NOT BE ACCEPTED
- 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED)
- 1.3. TENDERERS ARE REQUIRED TO SUBMIT ONE ORIGINAL HARD COPY PLUS A SOFT COPY IN A USB
- 1.4. THIS BID IS SUBJECT TO JOHANNESBURG WATER SCM POLICY VERSION 11
- 1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
- 1.6. 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 TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001, GROUND FLOOR. TENDERERS NAMES AND TOTAL PRICES, WHERE PRACTICAL WILL BE, READ OUT

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 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
- 2.4 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.5 BIDDER MUST BE REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

- 3.1. DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO
- 3.2. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO
- 3.3. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO
- 3.4. 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: 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:

Johannesburg Water SOC Ltd



Johannesburg Water

CONTRACT JW OPS 032/22

KIBLER PARK SEWER PUMP STATION UPGRADE

VOLUME 1

TENDER AND CONTRACT

**Prepared by
Programme Management Unit
PO Box 61542
Marshalltown
2107**

**Tel +27 11 688 1400
Fax +27 11 688 1521**

**V1.0
August 2018**

CHECK-LIST FOR TENDER SUBMISSION

The Tenderer is to indicate in the check-boxes provided that they have completed the required section of the tender document. Completion of this check-list 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 – refer**

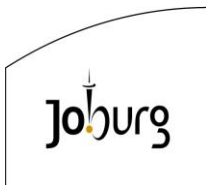
T2.2.4 below.

Ref	Description	Completed		For office use		
		Yes	No	Yes	No	Comments
Cover	Name of tenderer					
	Contact person					
	Telephone/Fax number					
T2.1	T2.2.2 Complete the Certificate of Authority					
	Submit Valid SARS Tax Compliance status Pin for Tenders					
	Confirm Proof of CSD Registration - submission of MA----- Number					
	Copy of Valid BBBEE certificate (SANAS/CIPC) or Sworn affidavit signed by the EME representative and attested by a Commissioner of oaths.					
	Consortium / JV agreement with all signatories and breakdown of each members contribution / role					
	Complete and sign MBD 6.1 Preference Points claim form					
T2.2.4	Complete and sign MBD 4 Declaration of Interest					
T2.2.4	Complete and sign MBD 8 past Supply Chain Management Practices Form					
	Complete and sign MBD 5 (Declaration for Procurement above R10m)*					
	Confirmation that you have no municipal commitments overdue for more than 90 days**(for both the bidder/company and for the directors)					
	Confirmation that suitable arrangements are in place for arrear municipal obligations with your local municipality					
	Annual Financial statements for past 3 years (AFS) *					
T2.2.4	Complete and sign MBD 9- Certificate of Independent bid Determination					
	Complete and sign Acknowledgement of JW Volume 3 Tender Drawings					
C2.2	Complete the Schedule of Rates and the Summary. Sign the Summary					
C.1.1	Complete the Form of Offer. Do not complete the Form of Acceptance					
	Sign the Form of Offer with 2 witnesses. Do not sign the Form of Acceptance					
Qualifications	Is your tender subject to any qualifications. If Yes, reference to such qualification/s must be indicated below: -----					

* for tenders with an estimated total value exceeding R10m (VAT included)

** for all tenders regardless of value

Signature: _____ Date: _____



CONTENTS:

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
	Part 3: Scope of Work	
	C3	Scope of Work
	Part 4: Site Information	
	C4	Site Information
		Tender Drawings
Volume 2		Occupational Health and Safety Specification and Environmental Management Plan

Employer:		Contractor:	
Witness:		Witness:	

Johannesburg Water (SOC) Ltd



CONTRACT NO. JW OPS 032/22

**KIBLER PARK SEWER PUMP STATION
UPGRADE**

VOLUME 1

TENDERING PROCEDURES

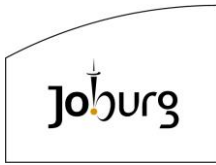


TABLE OF CONTENTS

T1.1..... TENDER DATA	TP.3
T1.1.1 Conditions of Tender	TP.3
T1.1.2 Tender Data.....	TP.3

T1.1 TENDER DATA

T1.1.1 Conditions of Tender

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>Volume 2A</p> <p>Part 3: Scope of Work</p> <p>C3.1 Scope of Work</p> <p>C3.2 Particular Specifications</p> <p>Part 4: Site Information</p> <p>C4 Site Information</p> <p>Volumes 2B:</p> <p>Generic Specifications</p> <p>Volume 3:</p> <p>Occupational Health, Safety and Environmental Specification and Environmental Management Plan</p>

Clause number	Tender Data
C.1.4	The Employer's representative is: Contact Person: Nosipho Mokoena Telephone: 011688 1585 E-mail address: nosipho.mokoena @jwater.co.za
C.2.1	Eligibility criteria and requirements CIDB registration and grading: <ol style="list-style-type: none"> Only tenderers who are registered with the CIDB, or are 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 a 3EB AND 2ME or higher, class of construction work, are eligible to submit tenders. Joint ventures are eligible to submit tenders provided that: <ol style="list-style-type: none"> every member of the joint venture is registered with the CIDB; 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 a 3EB AND 2ME , class of construction work.
C.2.7	The arrangements for a non-compulsory virtual clarification meeting are as stated in the Tender Notice and Invitation to Tender.
C.2.8	Replace the contents of the clause with the following: "Request clarification of the tender documents, if necessary, by notifying the Employer's Official indicated in 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."
C.2.9	Add the following to the clause: "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."
C.2.10.5	Add the following to the clause: "If no offer is made for an item, a line must be drawn through the space in pen. All prices and details must be legible / readable to ensure the tender will be considered for adjudication."

Clause number	Tender Data
C.2.11	<p>The evaluation on price alteration must be conducted as follows:</p> <ol style="list-style-type: none"> 1. Where the tender award strategy is to evaluate and award per item or category, the following must apply: <ol style="list-style-type: none"> i. 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 ii. 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 2. Where the tender award strategy is to evaluate and award total bid offer, the following must apply: <ol style="list-style-type: none"> i. 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. ii. 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. iii. If there is an alteration on the total bid offer and the amount in words without authentication, the bidders will be disqualified for the entire tender. <p>Corrections may not be made using correction fluid, correction tape or the like.</p>
C.2.12	<p>Replace Contents</p> <p>Alternative offers will not be permitted.</p>
C.2.13.3	Each tender offer shall be submitted as an original. Tenderers are also requested to submit a soft copy in a USB
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 65 Ntemi Piliso Newtown</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>

Clause number	Tender Data
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) a certificate certifying that the tenderer has no undisputed commitments for iii) municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days; iv) 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; v) 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>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> <ol 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. <p>"In the service of the state" means to be -</p> <ol 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;

Clause number	Tender Data
	<p>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> <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 “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 a) the name of that person; b) the capacity in which that person is in the service of the state; and c) the amount of the award. In order to give effect to the above, the questionnaire for the declaration of interests in the tender of persons in service of state in part T2 – Returnable Documents must be completed in full and signed.”</p>
C.2.27	<p>Add the following new clause:</p> <p>Tax Compliance 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 afforded a period of three (3) days to complete the following returnable documents (MBD 6.1, MBD 4, MBD 8, MBD 5, MBD 9) in instances where such forms are incomplete.</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 10:30 at the Tender Office located at 65 Ntemi Piliso, Newtown, Ground Floor. Tenderers names and total prices, where practical will be, read out.</p>
C.3.11	<p>Replace Contents with Returnable Schedule MBD 6.1 for evaluation criteria</p>

Evaluation Criteria: Functionality

PART A: TENDERER'S EXPERIENCE, QUALIFICATION AND EXPERIENCE OF KEY PERSONNEL

1	Tenderer's Experience	<p>The Tenderer (Company) must confirm a minimum of two (2) contracts/projects where electrical panels installation, motors installation and commission was completed successfully</p> <p style="text-align: center;">and</p> <p>The Tenderer (Company) must confirm a minimum of two (2) contracts/projects where Mechanical pumps installation, valves installation and Commission was completed successfully</p>	<p>Tenderer (Company) must confirm a minimum of projects as outline on the tenderer's experience description whereby those were carried out successfully.</p> <p>Note: Reference Letter</p> <p>The tenderer must request their client (where work was executed) to complete reference templates attached in the tender document in full or provide reference letters in their client's letter head with all information as required per the reference template provided.</p> <p>Note: Record of completed projects as per format given on section T2.1.6 accompanied with completion certificate / final approval certificate and supported with contactable references as per format given in T2.1.7.</p>	<p>Tenderer's Experience Submission Compliant</p> <p style="text-align: center;">(Yes/No)</p>
<p><i>The tenderer must achieve the requirements for the Company Experience in order to be considered for further evaluation.</i></p>				
2	Qualifications of Key Personnel	<p>The tenderer must submit proof of qualifications copies for the key personnel who will be assigned to this contract.</p>	<p>2.1. Contract / Project Manager</p> <p>The tenderer is required to submit a BSc or BEng or B.Tech Engineering (Electrical or Mechanical) qualification and a ECSA professional registration certificate as Pr Eng /Pr Tech Eng or Pr PMP/ Pr CPM for their contract manager.</p>	<p>Qualifications for Key Personnel Submission Compliant</p> <p style="text-align: center;">(Yes/No)</p>

		The following key personnel must be assigned: Contract/ Project manager, Electrician, Fitter and Safety Officer	2.2. Electrician The tenderer is required to submit a N2 certificate with an Electrical trade test and installation certificate for their electrician.	Qualifications for Key Personnel Submission Compliant (Yes/No)
			2.3. Fitter The tenderer is required to submit an N2 certificate with a trade test for their fitter.	Qualifications for Key Personnel Submission Compliant (Yes/No)
			2.4. Safety Officer The tenderer is required to submit The tenderer is required to submit a certified National Diploma (Safety or Environmental) or SAMTRAC/SHEOMTRAC/SHEMTRAC/MESHTRAC/NEBOSH/ Safety Officers Course plus proof of professional registration application qualification for their Safety Officer	Qualifications for Key Personnel Submission Compliant (Yes/No)
		The tenderer must achieve all the requirements for the Qualification of key personnel in order to be considered for further evaluation.		
	3	Experience of Key Personnel	The tenderer's key staff assigned to the contract must have the required experience in working with various mechanical plant. The tenderer is required to complete the attached Curriculum vitae template for their Contract Manager who will be assigned for the execution of the work.	
			3.1. Contract/ Project Manager The assigned personnel must have a minimum of 3 years' experience in (Electrical installations and commissioning or Mechanical installations and commissioning). The experience should be after obtaining the required qualification as stipulated in criterion 2.1.	Experience for Key Personnel Submission Compliant (Yes/No)
			3.2. Electrician The assigned Electrician must have a minimum of 2 Years' in electrical projects. The experience should be after obtaining the required qualification as stipulated in criterion 2.2.	Experience for Key Personnel Submission Compliant (Yes/No)



			3.3. Fitter The Fitter must have a minimum experience of 2 Years' in mechanical projects. The experience should be after obtaining the required qualification as stipulated in criterion 2.3.	Experience for Key Personnel Submission Compliant (Yes/No)
			3.4. Safety Officer The Safety officer must have a minimum experience of 2 Years' (Safety or environmental management projects). The experience should be after obtaining the required qualification as stipulated in criterion 2.4.	Experience for Key Personnel Submission Compliant (Yes/No)
			<i>The tenderer must achieve all the requirements for the Experience of key personnel in order to be considered for further evaluation.</i>	

C.3.11.2 & C.3.11.3	<p>The procedure for the evaluation of responsive tenders is Method 2 (Financial Offer and Preferences):</p> <p>1. APPLICATION OF THE PREFERENCE POINTS SCORING SYSTEM</p> <p><u>The following preference point systems are applicable to all bids:</u></p> <ul style="list-style-type: none"> - The 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included). <p>(a) The value of this bid is estimated not to exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable.</p> <p>(b) Preference points for this bid shall be awarded for:</p> <ul style="list-style-type: none"> (a) Price; and (b) B-BBEE Status Level of Contributor. <p>(c) The maximum points for this bid are allocated as follows:</p> <table border="1" data-bbox="470 1019 1401 1274"> <thead> <tr> <th></th><th>POINTS</th></tr> </thead> <tbody> <tr> <td>PRICE</td><td>80</td></tr> <tr> <td>B-BBEE STATUS LEVEL OF CONTRIBUTOR</td><td>20</td></tr> <tr> <td>Total points for Price and B-BBEE must not exceed</td><td>100</td></tr> </tbody> </table> <p>(d) Failure on the part of a bidder to submit proof of BBBEE status level of contributor Certificate will be interpreted to mean that preference points for BBBEE status level of contribution are not claimed.</p> <p>(e) The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.</p> <p>2. ADJUDICATION USING A POINT SYSTEM</p> <p>(a) The bidder obtaining the highest number of total points will be awarded the contract.</p> <p>(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;.</p> <p>(c) Points scored must be rounded off to the nearest 2 decimal places.</p> <p>(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 preference points for B-BBEE.</p> <p>(e) However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.</p>		POINTS	PRICE	80	B-BBEE STATUS LEVEL OF CONTRIBUTOR	20	Total points for Price and B-BBEE must not exceed	100
	POINTS								
PRICE	80								
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20								
Total points for Price and B-BBEE must not exceed	100								

	<p>(f) Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.</p> <p>3. POINTS AWARDED FOR PRICE</p> <p>THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS</p> <p>A maximum of 80 or 90 points is allocated for price on the following basis:</p> <table><tr><td>80/20</td><td>or</td><td>90/10</td></tr><tr><td>$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$</td><td>or</td><td>$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$</td></tr></table> <p>Where</p> <p>P_s = Points scored for comparative price of bid under consideration</p> <p>P_t = Comparative price of bid under consideration</p> <p>P_{min} = Comparative price of lowest acceptable bid</p>	80/20	or	90/10	$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$	or	$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$
80/20	or	90/10					
$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$	or	$P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$					
C.3.13.1	<p>Add to the existing clause:</p> <p>Tender offers will only be accepted if:</p> <ul style="list-style-type: none">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 documentd) 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:<ul style="list-style-type: none">i) abused the Employer's Supply Chain Management System; orii) 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; andj) the tenderer:<ul style="list-style-type: none">i) has sufficiently substantiated his experience in this type work;ii) has the required and experienced key personnel; andiii) 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.						

C.3.9	<p>Add the following new clause</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>1.JW shall check for arithmetic errors using the following sequence:</p> <ul style="list-style-type: none"> i. Check the amount in words against the amount in figures on the Form of Offer, ii. Check the Form of Offer against the Summary Schedule Total, iii. Check the Section Sub-Totals per section against the Summary Total for summation errors, iv. Check the Section Sub-Totals in the Summary Schedule against Section Sub-Totals in the Bill of Quantities. v. Check the Section Sub-Totals against the Item Totals for summation errors. vi. Check the Item Totals against the product of the Item Rate and the Quantity Provided. <p>2. If a bill of quantities or price schedule applies JW will request the bidder to correct the arithmetic errors as follows:</p> <ul style="list-style-type: none"> 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>3.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> <ul style="list-style-type: none"> 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. 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 Page 39 of 95 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>4.Clarification session(s) shall be held with Tenderer where there is pricing discrepancies, errors are highlighted and identified corrections are explained.</p> <p>4.1 Tenderer is afforded an opportunity to provide clarification, accept or reject identified corrections in writing.</p> <ul style="list-style-type: none"> i. In the event that the Tenderer accepts identified corrections, JW will proceed with evaluation. 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. iii. This is not an opportunity for Tenderers to change the bid
-------	---

	<p>offer. A bidder that does not agree to the above will be disqualified.</p> <p>4.2 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>4.3 Should the tenderer not provide the material, or 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>
	There are no additional conditions of tender.

--- END OF PART ---

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 Special Subcontracting Conditions	RD.14
(MBD 6.2) Declaration certificate for local production and content for designated sectors	RD. 15
(MBD 6.1) Preference points claim form in terms of the preferential procurement regulations	RD.25
MBD 4 Declaration of any potential conflict of interest	RD.31
MBD 8 Declaration of bidder's past Supply Chain management practices	RD.34
MBD 9 Certificate of independent bid determination	RD.37
T2.1.5 Proposed qualifications	RD.40
T2.1.6 Schedule of the Tenderer's experience	RD.41
T2.1.7 Contactable reference template	RD.42
T2.1.8 Schedule of key personnel	RD.45
T2.1.9 Curriculum vitae of key personnel	RD.46

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.51
T2.2.2 SARS Tax Compliance Status Pin and Proof of CSD registration i.e. MA xxxxxxxxxx number	RD.52

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.54

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.57
<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.4-11
Summary of Bill of Quantities	PD.12

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.

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.40
T2.1.6 Schedule of the Tenderer's experience	RD.41
T2.1.7 Contactable reference template	RD.42
T2.1.8 Schedule of key personnel	RD.45
T2.1.9 Curriculum vitae of key personnel	RD.46

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. JW14060 and any contract resulting from it on behalf of the company.

Chairman:

As Witnesses: 1.....

2.....

Date:

(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 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.

(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 i.e. 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

*insert separate page if necessary

Section 7: Record of spouses, children and parents in the service of the state

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stakeholder in a company or close corporation is currently or has been within the last 12 months been 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 the National Assembly or the National Council of Province | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

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 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

T2.1.4 Preferential Procurement

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

Form No.	Form Title	Description
JW6.1 MBD6.2	Special Conditions Declaration certificate for local production and content for designated sectors	Sub-contracting and Skills Transfer Form to be completed by the Tenderer
MBD 6.1	Empowerment and Preferential Procure- ment	Procedures and adjudication criteria for the in- formation of the Tenderer
MBD 4	Declaration of any po- tential Conflict of Inter- est	Form to be completed by the Tenderer
MBD 8	Declaration of bidder's past supply chain man- agement practices	Form to be completed by the Tenderer
MBD 5	Declaration for Procure- ment above R10 Million (VAT Included)	Form to be completed by the Tenderer
MBD9	Certificate of Independ- ent Bid Determination	Form to be completed by the Tenderer

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.

SPECIAL CONDITIONS

JW 6.1 (b)

The contract value does not exceed R30m, therefore the successful tenderer shall not be required to subcontract a minimum of 30% of the contact value.

MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

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

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

1. General Conditions

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

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

Where

- x is the imported content in Rand
y is the bid price in Rand excluding value added tax (VAT)

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

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

1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule) are not submitted as part of the bid documentation;

2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

BOQ Item no. (* see Note below)		<u>Stipulated minimum threshold</u>
	Electrical and telecoms cables	
	Main incomer panel	
3.1.1.1	Busbar termination from isolator to busbar trunking system (busway)	90%
3.1.1.2	Top busbar system (busway) - conform to IEC 60439-2:2000	90%
3.1.1.3	3Ph 1250A Isolator with door interlocking handle (load tested and certified) - conform to IEC 60947-3:2020	70%
3.1.1.4	See-through protective guard in front of cable terminations on isolator (include warning labels)	90%
3.1.1.5	240mm ² SWA 4 Core Cable (3Ph + N) Must include lugs, glands and terminations	90%
	LV MCC Equipment	
3.1.2.3	3x 37kW VSDs	70%
3.1.2.3	3x 132kW VSDs	70%
3.1.2.6	18 Way DB	70%
	Electric Motors	
3.1.3.1	3 X IE3, 4Pole, 37kW, Induction, foot mount motors	70%
3.1.3.2	3 X IE3, 4Pole, 132kW, Induction, foot mount motors	70%
3.1.3.4	Motor cables	90%
	Pumps	
4.1.1.1	2nd stage pumps. 3 x 132 kW Cornel 6NHTR or similar (including pulley drives)	70%
4.1.1.2	1st stage pumps. 3 x 37 kW KWP – K 125 - 500 or similar (incl. pulley drives)	70%
4.1.1.4	Sump recirculation pumps, Gorman-Rupp T3 or similar (excl. motor and drive)	70%
4.1.1.5	Grinder - (JWC model CCD3216 or similar)	70%

	Valves	
4.1.2.1	7 x DN200 Isolation gate valves	70%
4.1.2.2	4 x DN200 PN16 Swing check valves	70%

* **Note:** The BOQ Item No's referred in the table above refers to only one BOQ Item however this particular ITEM may appear in several other BOQ Item no's or descriptions.

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

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

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

The relevant rates of exchange information are accessible on www.reserve-bank.co.za

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

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

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

IN RESPECT OF BID NO.

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

NB

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

I, the undersigned, (full names),
do hereby declare, in my capacity as
of(name of bidder
entity), the following:

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:

- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011;

- (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C;

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

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above. The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

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

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

Annexure C: Local Content Declaration: Summary Schedule

Attach to this page the completed Annexure C forms.

Templates and guidance on determination of local content are obtainable from:

http://www.thedti.gov.za/industrial_development/ip.jsp

Returnable DocumentsRD.21

EXAMPLE		Annex C.2 (Mechanical Equipment)										SATS 1286.2011
Local Content Declaration - Summary Schedule												
(C1)	Tender No.	JW OPS 032/22										Note: VAT to be excluded from all calculations
(C2)	Tender description:	Kibler Park sewer pump station Upgrade										
(C3)	Designated product(s)											
(C4)	Tender Authority:											
(C5)	Tendering Entity name:											
(C6)	Tender Exchange Rate:		EU		GBP							
(C7)	Specified local content %	As Per MBD 6,2										
		Calculation of local content						Tender summary				
	Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Imported value	Local value	Local content % (per item)	Tender Qty	Total tender value	Total exempted imported content	Total Imported content
	(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
		Pumps										
	4.1.1.1	2nd stage pumps. 3 x 132 kW Cornel 6NHTR or similar (including pulley drives)										
	4.1.1.2	1st stage pumps. 3 x 37 kW KWP – K 125 500 or similar (incl. pulley drives)										
	4.1.1.4	Sump recirculation pumps, Gorman-Rupp T3 or similar (excl. motor and drive)										
	4.1.1.5	Grinder - (JWC model CCD3216 or similar)										
		Valves										
	4.1.2.1	7 x DN200 Isolation gate valves										
	4.1.2.2	4 x DN200 PN16 Swing check valves										
								(C20) Total tender value				
								(C21) Total Exempt imported content				
							(C22) Total Tender value net of exempt imported content					
								(C23) Total Imported content				
								(C24) Total local content				
								(C25) Average local content % of tender				
								(C20) Total tender value				

EXAMPLE											SATS 1286.2011																																																																																																																																					
Annex D																																																																																																																																																
Imported Content Declaration - Supporting Schedule to Annex C																																																																																																																																																
(D1)	Tender No.					Note: VAT to be excluded from all calculations																																																																																																																																										
(D2)	Tender description:																																																																																																																																															
(D3)	Designated Products:																																																																																																																																															
(D4)	Tender Authority:																																																																																																																																															
(D5)	Tendering Entity name:																																																																																																																																															
(D6)	Tender Exchange Rate:					USD		EU		GBP																																																																																																																																						
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5">A. Exempted imported content</th> <th colspan="5">Calculation of imported content</th> <th colspan="2">Summary</th> </tr> <tr> <th>Tender item no's</th> <th>Description of imported content</th> <th>Local supplier</th> <th>Overseas Supplier</th> <th>Foreign currency value as per Commercial Invoice</th> <th>Tender Exchange Rate</th> <th>Local value of imports</th> <th>Freight costs to port of entry</th> <th>All locally incurred landing costs & duties</th> <th>Total landed cost excl VAT</th> <th>Tender Qty</th> <th>Exempted imported value</th> </tr> <tr> <td>(D7)</td> <td>(D8)</td> <td>(D9)</td> <td>(D10)</td> <td>(D11)</td> <td>(D12)</td> <td>(D13)</td> <td>(D14)</td> <td>(D15)</td> <td>(D16)</td> <td>(D17)</td> <td>(D18)</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td colspan="10" style="text-align: right;">(D19) Total exempt imported value</td> <td colspan="2" rowspan="2" style="text-align: center;">This total must correspond with Annex C - C 21</td> </tr> <tr> <td colspan="10"> </td> </tr> </table>													A. Exempted imported content					Calculation of imported content					Summary		Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value	(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)																																					(D19) Total exempt imported value										This total must correspond with Annex C - C 21																																																	
A. Exempted imported content					Calculation of imported content					Summary																																																																																																																																						
Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value																																																																																																																																					
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)																																																																																																																																					
(D19) Total exempt imported value										This total must correspond with Annex C - C 21																																																																																																																																						
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5">B. Imported directly by the Tenderer</th> <th colspan="5">Calculation of imported content</th> <th colspan="2">Summary</th> </tr> <tr> <th>Tender item no's</th> <th>Description of imported content</th> <th>Unit of measure</th> <th>Overseas Supplier</th> <th>Foreign currency value as per Commercial Invoice</th> <th>Tender Rate of Exchange</th> <th>Local value of imports</th> <th>Freight costs to port of entry</th> <th>All locally incurred landing costs & duties</th> <th>Total landed cost excl VAT</th> <th>Tender Qty</th> <th>Total imported value</th> </tr> <tr> <td>(D20)</td> <td>(D21)</td> <td>(D22)</td> <td>(D23)</td> <td>(D24)</td> <td>(D25)</td> <td>(D26)</td> <td>(D27)</td> <td>(D28)</td> <td>(D29)</td> <td>(D30)</td> <td>(D31)</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td colspan="10" style="text-align: right;">(D32) Total imported value by tenderer</td> <td colspan="2"> </td> </tr> </table>													B. Imported directly by the Tenderer					Calculation of imported content					Summary		Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value	(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)																																																																																					(D32) Total imported value by tenderer											
B. Imported directly by the Tenderer					Calculation of imported content					Summary																																																																																																																																						
Tender item no's	Description of imported content	Unit of measure	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Total imported value																																																																																																																																					
(D20)	(D21)	(D22)	(D23)	(D24)	(D25)	(D26)	(D27)	(D28)	(D29)	(D30)	(D31)																																																																																																																																					
(D32) Total imported value by tenderer																																																																																																																																																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5">C. Imported by a 3rd party and supplied to the Tenderer</th> <th colspan="5">Calculation of imported content</th> <th colspan="2">Summary</th> </tr> <tr> <th>Description of imported content</th> <th>Unit of measure</th> <th>Local supplier</th> <th>Overseas Supplier</th> <th>Foreign currency value as per Commercial Invoice</th> <th>Tender Rate of Exchange</th> <th>Local value of imports</th> <th>Freight costs to port of entry</th> <th>All locally incurred landing costs & duties</th> <th>Total landed cost excl VAT</th> <th>Quantity imported</th> <th>Total imported value</th> </tr> <tr> <td>(D33)</td> <td>(D34)</td> <td>(D35)</td> <td>(D36)</td> <td>(D37)</td> <td>(D38)</td> <td>(D39)</td> <td>(D40)</td> <td>(D41)</td> <td>(D42)</td> <td>(D43)</td> <td>(D44)</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td colspan="10" style="text-align: right;">(D45) Total imported value by 3rd party</td> <td colspan="2"> </td> </tr> </table>													C. Imported by a 3rd party and supplied to the Tenderer					Calculation of imported content					Summary		Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value	(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)																																																													(D45) Total imported value by 3rd party																																			
C. Imported by a 3rd party and supplied to the Tenderer					Calculation of imported content					Summary																																																																																																																																						
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value																																																																																																																																					
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)																																																																																																																																					
(D45) Total imported value by 3rd party																																																																																																																																																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5">D. Other foreign currency payments</th> <th colspan="5">Calculation of foreign currency payments</th> <th colspan="2">Summary of payments</th> </tr> <tr> <th>Type of payment</th> <th>Local supplier making the payment</th> <th>Overseas beneficiary</th> <th>Foreign currency value paid</th> <th>Tender Rate of Exchange</th> <th colspan="5"> </th> <th colspan="2">Local value of payments</th> </tr> <tr> <td>(D46)</td> <td>(D47)</td> <td>(D48)</td> <td>(D49)</td> <td>(D50)</td> <td colspan="5"> </td> <td colspan="2">(D51)</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td colspan="5"> </td><td colspan="2"> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td colspan="5"> </td><td colspan="2"> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td colspan="5"> </td><td colspan="2"> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td colspan="5"> </td><td colspan="2"> </td></tr> <tr> <td colspan="5" style="text-align: right;">(D52) Total of foreign currency payments declared by tenderer and/or 3rd party</td> <td colspan="5"> </td> <td colspan="2"> </td> </tr> <tr> <td colspan="10">Signature of tenderer from Annex B</td> <td colspan="2" rowspan="2" style="text-align: center;">This total must correspond with Annex C - C 23</td> </tr> <tr> <td colspan="10">Date:</td> </tr> <tr> <td colspan="10" style="text-align: right;">(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above</td> <td colspan="2"> </td> </tr> </table>													D. Other foreign currency payments					Calculation of foreign currency payments					Summary of payments		Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange						Local value of payments		(D46)	(D47)	(D48)	(D49)	(D50)						(D51)																																																		(D52) Total of foreign currency payments declared by tenderer and/or 3rd party												Signature of tenderer from Annex B										This total must correspond with Annex C - C 23		Date:										(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above													
D. Other foreign currency payments					Calculation of foreign currency payments					Summary of payments																																																																																																																																						
Type of payment	Local supplier making the payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange						Local value of payments																																																																																																																																						
(D46)	(D47)	(D48)	(D49)	(D50)						(D51)																																																																																																																																						
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party																																																																																																																																																
Signature of tenderer from Annex B										This total must correspond with Annex C - C 23																																																																																																																																						
Date:																																																																																																																																																
(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above																																																																																																																																																

Returnable Documents

**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL
PROCUREMENT REGULATIONS (January 2017) (MBD 6.1)**

1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
 - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
- 1.2 The value of this bid is estimated to exceed R50 000 000 (all applicable taxes included) and therefore the 90/10 preference point system shall be applicable.
- 1.3 Preference points for this bid shall be awarded for:
- (a) Price; and
 - (b) B-BBEE Status Level of Contributor.
- 1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

- 1.5 Failure on the part of a bidder to submit proof of BBBEE status level of contributor Certificate will be interpreted to mean that preference points for BBBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim regarding preferences, in any manner required by the purchaser.

2. ADJUDICATION USING A POINT SYSTEM

- 2.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 2.2 Preference points shall be calculated after prices have been brought to a comparative basis considering all factors of non-firm prices and all unconditional discounts;
- 2.3 Points scored must be rounded off to the nearest 2 decimal places.
- 2.4 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 preference points for B-BBEE.
- 2.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.
- 2.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

3. POINTS AWARDED FOR PRICE

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

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

80/20 or 90/10

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

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

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

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

BBBEE Status Level of Contributor	Number of Points (based on 80/20)	Number of Points (based on 90/10)
1	20	10
2	18	9
3	14	6
4	12	5
5	8	4
6	6	3
7	4	2
8	2	1
Non-compliant contributor	0	0

5. BID DECLARATION

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

B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 5.1

- 5.2 B-BBEE Status Level of Contributor: = (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by relevant proof of BBBEE status level of contributor.

6. **DECLARATION WITH REGARD TO COMPANY/FIRM/ BIDDER**

- 6.1 Name of company/firm/bidder:.....
- 6.2 VAT registration number:.....
- 6.3 Company registration number:.....
- 6.4 Valid Tax Compliance Status Pin for Tenders.....
- 6.5 Proof of CSD Registration - indicate MA -----(Number)
- 6.6 Postal address
- 6.7 Physical address.....
- 6.8 Contact persontelephone number.....
- 6.9 Facsimile numberCell number.....
- 6.10 Email address.....website address:.....
- 6.11 Was your company registered under another name previously? If yes, provide company registration details.....
.....
.....
.....

6.12 **TYPE OF COMPANY/ FIRM**

- ☐ Partnership/Joint Venture / Consortium*
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited
- [TICK APPLICABLE BOX]

***NB: In the case of the bidder being a Partnership / Joint Venture / Consortium, this form must be completed in respect of each member of the Joint Venture / Consortium or Partnership and included in the tender submission**

The Consortium, Partnership or Joint Venture must indicate each member's contribution to the project as well as the percentage of such contribution by completion and submission of the appropriate Consortium, Partnership or Joint Venture agreement with the tender.

6.13 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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

COMPANY CLASSIFICATION

- ☐ Manufacturer
☐ Supplier
☐ Professional service provider
☐ Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

7. OWNERSHIP STRUCTURE OF ENTERPRISE

List below all the proprietors/partners/shareholders/ members of your enterprise: Attach your own list if the space provided below is inadequate:

Initials & Surname	RSA ID number	Citizen-ship	Race (A/Ch/Co/I/W) ¹	Owner-ship Effective Date	Gen-der M/F	Disa-bled Yes/No	% Owned

¹ A/Ch/Co/I/W: means African, Chinese, Coloured, Indian or White

8. MUNICIPAL INFORMATION

Municipality where business is situated:

Is the property owned ? yes / no

.....

*If yes, Stand / Erf Numberand Registered municipal Account Number:

**Is the property leased? Yes / No

Stand / Erf Number:.....

Nota Bene

*Copy of latest up to date municipal account (not older than 90 days) or where the account is in arrears, confirmation of suitable arrangements have been made with the respective municipality must be submitted with the bid.

**Alternatively, if the premises are leased, then a copy of a valid lease agreement must be submitted.

- 8.1 Total number of years the company/firm has been in business:.....
- 8.2 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:
- i) The information furnished is true and correct;
 - ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
 - iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.2, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
 - iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

WITNESSES (Name and signature)

1.

2.

Name of authorized signatory:

.....

SIGNATURE(S) OF BIDDERS(S)

DATE:

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, shareholder²):.....

3.4 Company Registration Number:

3.5 Tax Reference Number:.....

3.6 VAT Registration Number:

3.7 The name 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**
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:

.....
.....

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 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **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 of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes <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)? The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes <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 of law outside 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:		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION JW MBD 9

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. takes all reasonable steps to prevent such abuse;
 - b. rejects 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. cancels 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.

JW 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;
 - (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.

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.

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 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 _____

T2.1.7 Contactable Reference Template

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water for the **Kibler Park Sewer Pump Station Upgrade**.

Name of tenderer:

Description of goods / services provided (scope of work):

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

Was their performance satisfactory?

Yes / No*

*If **No** to any of the questions above, please furnish details.

.....
.....

Name of authorised person:

Signature:.....

Date

Telephone:

Mobile:

Email:

Completed on behalf (name of business)

*NB: This document must be completed in full by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with **all** the above requirements. A separate form must be completed for each reference as required in the evaluation criteria. Failure to adhere to this requirement will result in such tender being prejudiced. 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.*

T2.1.7 Contactable Reference Template

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water for the **Kibler Park Sewer Pump Station Upgrade**.

Name of tenderer:

Description of goods / services provided (scope of work):

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

Was their performance satisfactory?

Yes / No*

*If **No** to any of the questions above, please furnish details.

.....
.....

Name of authorised person:

Signature:.....

Date

Telephone:

Mobile:

Email:

Completed on behalf (name of business)

*NB: This document must be completed in full by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with **all** the above requirements. A separate form must be completed for each reference as required in the evaluation criteria. Failure to adhere to this requirement will result in such tender being prejudiced. 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.*

T2.1.7 Contactable reference template

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water for the **Kibler Park Sewer Pump Station Upgrade**.

Name of tenderer:

Description of goods / services provided (scope of work):

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

Was their performance satisfactory?

Yes / No*

*If **No** to any of the questions above, please furnish details.

.....
.....

Name of authorised person:

Signature:.....

Date

Telephone:

Mobile:

Email:

Completed on behalf (name of business)

*NB: This document must be completed in full by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with **all** the above requirements. A separate form must be completed for each reference as required in the evaluation criteria. Failure to adhere to this requirement will result in such tender being prejudiced. 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
Site Agent, Contracts Manager						
Foremen, Quality Control and Safety Personnel						
Technicians, Surveyors, etc.						
Electrician and other Skilled workers						
Plant Operators						
Unskilled Workers						
Others:						

SIGNATURE:.....

DATE:

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

T2.1.9 Curriculum Vitae of Key Personnel

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

Contracts Manager

[illegible]**Certification:**

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

.....
Signature of person named in the schedule

.....
Date

Electrician

[illegible]**Certification:**

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

.....
Signature of person named in the schedule

.....
Date

Safety Officer

[illegible]**Certification:**

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

.....

.....

Signature of person named in the schedule

Date _____

Fitter

[illegible]

Certification:

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

.....
Signature of person named in the schedule

.....
Date

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.51
T2.2.2 SARS Tax Compliance Status Pin and Proof of CSD registration i.e. MA xxxxxxxxxxxx number	RD.52

T2.2.1 Contractor's Certificate of Registration With CIDB

The Tenderer shall attach hereto the Contractor's Certificate of Registration with CIDB. Failure to submit the certificate 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.

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 xxxxxxxxxx number.

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.54
--------	---	-------

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 :

Equipment Schedule

[illegible]

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.57

JW 6.4 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: Contractor Competency Evaluation
- Annexure 4: Environmental Management Plan
- Annexure 5: Waster management Plan
- Annexure 6: COVID -19 Guideline for Contractors
- Annexure 7: COVID-19 Risk Assessment for Contractors
- Annexure 8: Sign off form

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*	

**Signature must be as per form JW 3.3 as applicable*

Johannesburg Water SOC Ltd



VOLUME 1

PART 1: AGREEMENT AND CONTRACT DATA

TABLE OF CONTENTS

	PAGE (S)
C1.1 FORM OF OFFER (AGREEMENT)	C.1
C1.1.1 FORM OF OFFER.....	C.1
C1.1.2 FORM OF ACCEPTANCE	C.2
C1.1.3 SCHEDULE OF DEVIATIONS	C.3
C1.2 CONTRACT DATA	C.5
C1.2.1 PART 1: DATA PROVIDED BY THE EMPLOYER	C.5
C1.2.2 PART 2: DATA PROVIDED BY THE CONTRACTOR	C.15

C1.1 FORM OF OFFER (AGREEMENT)

C1.1.1 FORM OF OFFER

THE TENDERER 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:

**CONTRACT NO. JW OPS 032/22
Kibler Park Sewer Pump Station Upgrade**

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

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

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS

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

Signature(s)

Name(s)

Capacity

For the Tenderer

(Name and address of organisation)

**Name and
signature of
witness**

Date _____

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

The terms of the contract are contained in

- Part 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 Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within **twenty eight (28) days** after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the employer 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 Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now the Contractor) within **five (05) 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

Signature(s)

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 of
witness

Date _____

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 Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here;
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here; 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 _____

Details _____

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

Name(s)

Capacity

**Name and
signature of
witness**

(Name and address of organisation)

Date _____

**For the Employer:
Signature(s)**

Name(s)

Capacity

**Name and
signature of
witness**

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

(Name and address of organisation)

Date _____

C1.2 CONTRACT DATA

C1.2.1 PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The General Conditions of Contract (GCC) for Construction Works Third Edition (2015), published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, is applicable to this Contract and is obtainable from www.saice.org.za.

CONTRACT SPECIFIC DATA

The following contract specific data are applicable to this Contract:

The following contract specific data are applicable to this Contract.				
GCC Clause		Information		
Clause 1.1.1.5		Contract commencement should be as per GCC (Subject to acceptance of offer by JW, the delivery of all drawings to the contractor and his copy of his contract.		
Clause 1.1.1.13		The Defects Liability Period is fifty-two 52 weeks from the date of the Certificate of Completion.		
Clause 1.1.1.14		The time for achieving Practical Completion is 12 months.		
Clause 1.1.1.15		The name of the Employer is Johannesburg Water (SOC) Limited, the contact person is Ms Nosipho Mokoena		
Clause 1.2.1.2		The address of the Employer is: Physical Postal Tel: 011 688 1585 65 Ntengi piliso P.O. Box 61542 Fax: 011 688 1585 Newtown Marshalltown 2107 Email : nosipho.mokoena@jwater.co.za		
Clause 1.1.1.26		The Pricing Strategy is Re-measurement Contract		
Clause 5.1.1 and 5.8.1		The non-working days are Sundays The special non-working days are all Public Holidays in terms of the Public Holidays Act (as amended), and the annual “Builder’s Break” as defined by SAFCEC on an annual basis.		
Clause 5.3.1		The documentation required before commencement with Works execution are: <ul style="list-style-type: none">• Health and Safety Plan (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		
Clause 5.3.2		The time to submit the Contract documentation required before commencement of the Works is twenty-one (21) days.		

GCC Clause	Information
Clause 5.4.2	The Works will be executed on a non-operational sewer pump station. <i>Note any requirements regarding phased Access, Construction and Handover.</i>
Clause 5.13.1	<p>The penalty for failing to complete the Works is the greater of: An amount equal to the daily Time Related P&G rate (as calculated from the Time Related P&G Section in the Bill of Quantities), or</p> <p>R50000 (Fifty- thousand Rand) per day, whichever is greater.</p> <p>Refer to “C2.1 Pricing Data : Pricing Instructions – Preamble to the Bill of Quantities” for the calculation of the daily Time Related P&G rate.</p>
Clause 5.16.3	The latent defect period is Ten (10) years for Civil Engineering works, Five (5) <u>years</u> for Building Works, Three (3) <u>years</u> for Electrical, Control and Instrumentation engineering works and Five (5) years for Mechanical engineering works.
Clause 6.2.1	The security to be provided by the Contractor shall be in the form of a Performance Guarantee and will comply with the requirements of Clause 6.2.3. The value of the Performance Guarantee shall be ten (10) % of the Contract Sum (excl. VAT).
Clause 6.8.2	<p>If the value of payment certificates is to be adjusted by a Contract Price Adjustment Factor, the value of the payment certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule, with the following values:</p> <p>The value of “x” is 0,10</p> <p>The values of the coefficients are: a = 0,32 Labour b = 0,25 Contractor’s equipment c = 0,33 Material d = 0,10 Fuel</p> <p>The province where in the Site is located is Gauteng. The base month is the month prior to the closing of the tender.</p>
Clause 6.8.3	Price adjustments for variations in the costs of special materials are allowed.
Clause 6.10.1.5	<p>The percentage advance on materials delivered to Site but not yet built into the Permanent Works is eighty percent (80%).</p> <p>The percentage advance on Plant not yet supplied to Site is eighty percent (80%). A Cession of Rights ceding ownership to the Client is required.</p>
Clause 6.10.3	<p>The percentage retention on the amounts due to the Contractor is 10%.</p> <p>The limit of retention money is 5% of the Contract Price</p>
6.10.4	<p>Delivery, dissatisfaction with and payment of payment certificates</p> <p>Delete Clause 6.10.4 and replace with the following:</p> <p>Payment shall be made upon:</p> <ul style="list-style-type: none"> • The Contractor providing a payment certificate with all required supporting documents to the Employer 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.

GCC Clause	Information
	<p>Payment will be made within 30 days of receipt of the supplier's statement.</p> <p>Payment shall be subject to the Contractor submitting an Original Tax Invoice compliant with SARS requirements for Valid Tax Invoice to the Employer for the amount due. Any dissatisfaction in respect of such payment certificate shall be dealt with in terms of Clause 10.2.</p>
6.10.6	A Retention Money Guarantee is not permitted.
Clause 8.4.1.1	<p>Add to the end of Clause 8.4.1.1 the following text:</p> <p>"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), and"</p>
Clause 8.6.1	<p>Delete Clause 8.6.1 and replace it with the following:</p> <p>8.6.1 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 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:</p> <p>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:</p> <p>8.6.1.1.1 the Contract Price,</p> <p>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</p> <p>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.</p> <p>8.6.1.2 Public Liability Insurance which will provide indemnity against legal liability in the event of accidental death of or injury to third parties 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 R 10 million in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause.</p> <p>8.6.1.3 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.</p> <p>8.6.1.4 Full details of the Contract Works and Public Liability insurances effected by the Employer may be obtained from the Employer, and the Contractor/Subcontractors are deemed to be aware of the terms, exclusions and conditions of these insurances.</p> <p>8.6.1.5 The Employer shall pay the premium in connection with the insurances effected by the Employer in 8.6.1.1, 8.1.6.2 and 8.6.1.3 above.</p> <p>8.6.2 The Employer/Contractor/Subcontractors 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.</p>

GCC Clause	Information
	<p>8.6.3 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:</p> <p>8.6.3.1. 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, via the Employer, giving the circumstances, nature and an estimate of the loss or damage.</p> <p>8.6.3.2. 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, via the Employer.</p> <p>8.6.3.3. The Contractor shall afford all access necessary to the representatives of the Insurers for the purpose of the assessment of any loss or damage.</p> <p>8.6.3.4. Negotiations on the settlement of claims shall be conducted by the Contractor/Sub-Contractor with the Insurers through the Employer's Insurance Brokers, via the Employer.</p> <p>8.6.4 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.</p> <p>8.6.5 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 and brought on to the Site against all risks of physical loss or damage for the period that such Plant shall be on the Site to the full value thereof. In respect of a 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 if it has ensured 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, via the Employer, the policy or policies of insurance and receipts for payment of the current premiums.</p> <p>8.6.6 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)</p> <p>8.6.7 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 R2,5 million.</p> <p>8.6.8 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, via the Employer, 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 14 days from the Commencement Date.</p> <p>8.6.9 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 Bill of Quantities.</p>

GCC Clause	Information
	<p>8.6.10 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.</p> <p>8.6.11 In addition to any statutory obligations, or other requirements contained in the General Conditions of Contract, the Contractor shall report in writing to both the Employer 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 and/or the Employer's Insurers shall have the right to make any enquiries, either on the Site or elsewhere, as to the cause and results of any such accident and the Contractor shall give the Employer and/or the Employer's Insurers full access and facilities for carrying out such enquiries.</p> <p>8.6.12 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.</p> <p>8.6.13 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.</p> <p>8.6.14 The Employer shall not be liable for any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employ of the Contractor or any Sub-Contractor, save and except an accident or injury resulting from any act or omission 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.</p> <p>8.6.15 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 8.6.14 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 on request. 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 such policy and the receipt for payment of the current premium.</p> <p>8.6.16 If the Contractor fails 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 event, 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.</p> <p>8.6.17 The Contractor shall ensure that all proposed and appointed sub-contractors are fully aware of the contents of Clause 8.6.1</p>
Clause 8.6.1.1.2	The value of Plant and Materials supplied by the Employer to be included in the insurance sum is nil.
Clause 8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is ten (10)% of the Contract Sum.

GCC Clause	Information
Clause 10.7.1	The determination of disputes shall be by arbitration.

C1.2.1.1 Additions

The additional Conditions of Contract are:

C1.2.1.1.1 Penalties

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

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 5.17 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;

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 PS 3.7.3, 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 PS 3.7.3 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.

C1.2.1.1.2 Source of instructions

The Contractor shall neither seek nor accept instructions from any authority external to the Employer 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.

C1.2.1.1.3 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.

C1.2.1.1.4 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 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.

C1.2.1.1.5 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 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.

C1.2.1.1.6 Returns of labour, SMME, plant, equipment and material

The Contractor shall provide a return in detail in the form and at such intervals as the Employer 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 or his duly authorized representative may require.

C1.2.1.1.7 Materials and workmanship

All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Employer's instructions and shall be subjected from time to time to such tests as the Employer 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. All testing equipment and instruments provided by the Contractor shall be used only by the Employer or by the Contractor in accordance with the instructions of the Employer.

- 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, 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.

C1.2.1.1.8 Examination of the work before covering up

No work shall be covered up or put out of view without the approval of the Employer or his duly authorize representative and the Contractor shall afford full opportunity for the Employer 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 whenever any such work or foundations is or are ready or about to be ready for examination. The Employer or his duly authorized representative shall without unreasonable delay, unless he considers it unnecessary and advises the Contractor accordingly, attend for the purpose of examining and measuring such work or of examining such foundations.

C1.2.1.1.9 Employer's power to order removal of improper work and materials

The Employer 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 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 or his duly authorized representative in accordance with the Contract.

C1.2.1.1.10 Default of Contractor in carrying out Employer'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 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.

C1.2.1.1.11 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.

C1.2.1.1.12 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.

C1.2.1.1.13 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.

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.

C1.2.2 PART 2: DATA PROVIDED BY THE CONTRACTOR

GCC Clause	Information																		
Clause 1.1.1.9	The name of the Contractor is																		
Clause 1.2.1.2	<p>The address of the Contractor is:</p> <table> <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> </table>	Physical	Postal	Tel:	Fax:	Email:
Physical	Postal	Tel:																	
.....																	
.....	Fax:																	
.....																	
.....	Email:																	
.....																	
Clause 6.5.1.2.3	<p>The percentage allowance on the net cost of materials actually used in the completed work is(.....)%</p> <p>The percentage allowance on the gross remuneration of the workmen actually engaged is(.....)%</p>																		
Clause 6.6.1.2.1	Provisional Sums and Subcontracting: The percentage allowance to cover overhead charges is%																		
Clause 6.8.3	<p>The variation in cost of special materials is;</p> <table> <tr> <td>Type of Special Material</td><td>Unit</td><td>Rate or Price</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> <tr> <td>.....</td><td>.....</td><td>.....</td></tr> </table>	Type of Special Material	Unit	Rate or Price
Type of Special Material	Unit	Rate or Price																	
.....																	
.....																	
.....																	
.....																	
.....																	



C1.3 FORMS OF SECURITIES

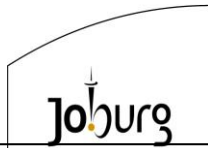
FORMS FOR COMPLETION BY THE CONTRACTOR

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

Form	Page
Form of Guarantee	F.2
Blasting Indemnity	F.4
Agreement in terms of the Occupational Health and Safety Act	F.5
Occupational Health and Safety Indemnity Undertaking	F.7
Transfer of Rights and Indemnity	F.9

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. An original document, from a financial institution, with the same text will be provided by the Contractor within the time stated in the Contract Data. Only a Bank or approved Insurance Company or Guarantee Corporation is acceptable as Guarantor.



FORM OF GUARANTEE

PRO-FORMA

Contract No. JW OPS 032/22

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

(Hereinafter called “the Contractor”)

on the _____ day of _____ 20_____ for the construction of

Contract No JW OPS –: 032/22

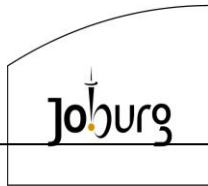
Kibler Park Sewer Pump Station Upgrade

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 fulfillment 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 authorized 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 _____
_____(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 here from as

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

on this _____ day of _____ 20_____

As witnesses

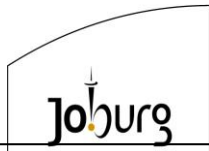
1. _____

2. _____

Signature

Duly authorised to
sign on behalf of

Address



BLASTING INDEMNITY

Contract No. _____

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 Company) 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 Company 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 Company 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 Company 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

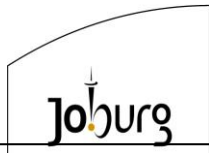
1. _____

SIGNATURE

2. _____

DESIGNATION OF SIGNATORY

*Delete which does not apply



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 (SOC) 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 _____

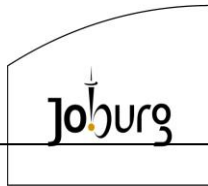
Signature on behalf of Employer _____

Compensation Fund Registration No. of mandatory _____

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

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 mandatories (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 mandatories must be familiar with the relevant provisions of the Act
6. Mandatories who utilise the services of their own mandatories (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 Johannesburg Water 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 Johannesburg Water 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.



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 Johannesburg Water (SOC) Ltd 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 Johannesburg Water (SOC) Ltd; 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, Johannesburg Water (SOC) Ltd -

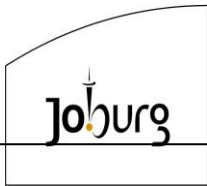
2.1 in respect of any costs that I/my firm and/or employees and/or subcontractors and their employees may incur of necessity in compliance with the above undertakings; and

2.2 against any claims that may be instituted against Johannesburg Water (SOC) Ltd and/or any liability that Johannesburg Water (SOC) Ltd may incur, whether instituted and/or caused by me/my firm's employees, agents, consultants, subcontractors and/or their employees and visitors or Johannesburg Water (SOC) Ltd's clients or neighbors 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 Johannesburg Water (SOC) Ltd and any damages for which I, managers or directors of my firm hold Johannesburg Water (SOC) Ltd 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.

4.0 I hereby confirm that I have the authority to sign this indemnity undertaking and that Johannesburg Water (SOC) Ltd is not obliged to confirm such confirmation.



Signed at _____ this _____ day

of _____

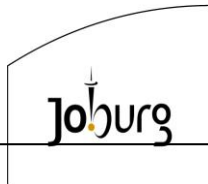
Signature

Capacity

As witnesses:

1 _____

2 _____



TRANSFER OF RIGHTS AND INDEMNITY

(To be completed during construction by successful Tenderer only)

Claim for materials on site, Payment Certificate No. Date

Contract No: For (contract title)

I, the undersigned (name of signatory), in my capacity as

..... of (name of Contractor)

Duly authorized hereto on behalf of the Contractor hereby transfer, cede and assign all the Contractor's rights, titles and interest in and to the materials and goods, for which evidence of bona fide ownership is attached hereto, unto and in favor of (name of Employer) Insofar as the Contractor retains actual control of the materials and goods, the right of ownership thereof passes to the Employer by constitutum possessorium.

I herewith indemnify the Employer against any claim to and in respect of said materials by reason of the Contractor's sequestration or liquidation or of any defect in the Contractor's title to the materials and agree that no payment for materials on site will be made by the Employer until such time as I have submitted documentary proof of bona fide ownership of the said materials and goods.

This transfer shall become effective upon conclusion of the Contractor receiving payment from Employer or from any other person on behalf of the materials and goods as Materials on Site, payment of retention money thereon excluded.

I further confirm that I am fully responsible for all materials and goods listed under this Transfer of Rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

This certificate of Transfer of Rights applies only to the materials and goods as listed in the following table.

DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT	SUPPLIER
TOTAL VALUE OF MATERIALS AND GOODS					

Signed by: Date:

For and behalf of the Contractor

Witnessed by: Date:

Note: this from, together with the documentary proof of ownership or proof of payment by the Contractor to the supplier, shall accompany the Contractor's claim for payment for materials on site in terms of Clause 6.10.1.5 of the General Conditions of Contract 2015 Latest Edition.

Johannesburg Water (SOC) Ltd



VOLUME 1

CONTRACT

PART 2:

PRICING DATA

C2.1 PRICING DATA: PRICING INSTRUCTIONS

PREAMBLE TO THE BILL OF QUANTITIES

1. 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 “Electrical Engineering Quantities”, by the South African Institute of Electrical Engineering.
2. The basis and principles of measurement and payment are described in Clause 8 of each of the Standardised Specifications for Electrical Engineering Construction. The applicable SANS 1200 Standardised Specifications are listed in the Scope of Work, Portion 1: Project Specification. Variations and amendments to the Standardised Specifications are contained in the Scope of Work, Portion 2: Variations and Additions to the Standardised Specifications.
3. 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.
4. The clauses in a specification in which further information regarding the Bill item may be found are listed in the “Payment Refers” column in the Bill. The reference clauses indicated are not necessarily the only sources of information in respect of billed 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 1200 G.
5. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
6. The quantities set out in the Bill of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Employer’s Agent from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.
7. The prices and rates to be inserted in the bill of Quantities are to be the full inclusive prices for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the

work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable 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.

8. A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities are stated or not. An item against which no price is entered will be covered by the other prices or rates in the Bill.
9. Except where a rate only is required, the tendered price for each billed item is to be inserted in the "Amount" column. The total tendered price is to be inserted in the Summary of the Bill of Quantities.
10. Arithmetical errors in the Bill of Quantities will be corrected in accordance with Clause C3.9 of the Conditions of Tender.
11. The units of measurement described in the Bill of Quantities are metric units. Alternatives used in the Bill of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
	=	kilometre	t	=	ton (1000kg)
m ²	=	square metre	No.	=	number
m ² pass	=	square metre pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewtom
m ³	=	cubic metre	MN.m	=	meganewtom-metre
m ³ km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	%	=	per cent
MPa	=	mega Pascal	kW	=	kilowatt
Months	=	Calendar Months			
12. The Tenderer shall price each item in the Bill of Quantities in **BLACK INK**.

Contract JWOPS 032/22

Kibler Park Sewer Pump Station Upgrade

Bill of Quantities Document

<u>Contents</u>	<u>Page No.</u>
SCHEDULE 1: PRELIMINARY & GENERAL	PD.5 – PD6
SCHEDULE 2: CIVIL WORKS	PD.7 – PD8
SCHEDULE 3: ELECTRICAL	PD.9 – PD10
SCHEDULE 4: MECHANICAL	PD.11 – PD12
SCHEDULE 4: TESTING AND COMMISSIONING	PD.13
SUMMARY OF BILL OF QUANTITIES	PD.14

SCHEDULE 1 : PRELIMINARY & GENERAL						
ITEM No.	PAYM. REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1		SCHEDULE 1: : PRELIMINARY & GENERAL				
1.1		SCHEDULED FIXED- CHARGE AND VALUE RELATED ITEMS				
1.1.1		<u>Contractual Requirements Establishment of facilities on Site facilities for the facilities for Contractor:</u>				
1.1.1.1		a) Site Establishment	Sum	1		
1.1.1.2		b) Tools and equipment	Sum	1		
1.1.1.3		c) Access & Security	Sum	1		
1.1.2		<u>Other Fixed-charge Obligations</u>				
1.1.2.1		a) Compliance with the Health & Safety Specification and	Sum	1		
1.1.2.2		b) Compliance with the Environmental Management Plan	Sum	1		
1.1.2.3		c) Establish Survey Control	Sum	1		
1.3		DAYWORKS (Provisional)				
		<u>Labour:</u>				
1.3.1		a) Foreman	hr	1		
1.3.2		b) Skilled	hr	1		

1.3.3	c) Semi-skilled	hr	1		
1.3.4	d) Unskilled	hr	1		
1.3.5	<u>Plant Equipment:</u>				
1.3.5.1	a) Min. 6m ³ Tip truck:	hr	1		
1.3.5.2	b) TLB	hr	1		
1.3.5.3	c) Plate compactor	hr	1		
1.3.5.4	d) Min. 10 ton Mobile Crane truck	hr	1		
1.4	OTHER FIXED CHARGES				
1.4.1	As-Built Survey	Sum	1		
1.4.2	<u>Preparation of As-Built or Record Drawings</u>				
	The cost shall include for the preparation, submission and acceptance by the Employer's representative and shall only be due once the works have been successfully tested and commissioned.	Sum	1		
1.6	DEFECTS LIABILITY PERIOD				
1.6.1	Defects and Liability Period	Sum	1		
TOTAL CARRIED TO SUMMARY					

SCHEDULE 2 : CIVIL ENGINEERING						
ITEM No.	PAYM. REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2		SCHEDULE 2 : CIVIL ENGINEERING				
2.1		SITE CLEARANCE				
2.1.1		a) Contractor Site Establishment	Sum	1		

2.1.2	c) Excavation (Soft pickable soil) and reinstatement (backfilling and compacting)	m ³	1		
2.2	CABLE DUCTS				
2.2.1	Cable trench	m	1		
2.2.2	<u>Transport materials and debris:</u> Rates tendered shall include for all haul to a registered municipal dump including any dumping charges levied.	Sum	1		
2.3	CEILING IsoBoard high density 32 - 36kg/m ³ rigid extruded polystyrene 100% closed seal insulating board of 80mm and 600mm width, tack fixed with recommended adhesive at 200mm intervals to timber branderling installed at a maximum of 700mm centres transversely to existing trusses, and edge fixed with concealed ceiling clips screwed/pop-riveted to timber branderling. Boards to be secured to perimeter branderling with drywall screws and washers at 300mm centres.	m ²	1		
2.4	<u>PAINTING</u>				
2.4.1	Supply and apply two coats of water based matt PVA paint on the IsoBoard ceiling strictly in accordance with manufacturer's instructions (provisional)	m ²	1		
2.4.2	Clean and repaint the walls	m ²	1		

TOTAL CARRIED TO SUMMARY		
---------------------------------	--	--

SCHEDULE 3: ELECTRICAL ENGINEERING						
ITEM No.	PAYM. REFER S	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3		SCHEDULE 3: ELECTRICAL ENGINEERING REQUIREMENTS				
3.1		<u>PART 1: PROCUREMENT, DELIVERY AND INSTALLATION</u>				
3.1.1		Main incomer panel				
		Mild steel IP65 floor standing enclosure (conform to IEC 61439) - single door, panel base min. 100mm	sum	1		
3.1.1.1		Busbar termination from isolator to busbar trunking system (busway)	sum	1		
3.1.1.2		Top busbar system (busway) - conform to IEC 60439-2:2000	sum	1		
3.1.1.3		3Ph 1250A Isolator with door interlocking handle (load tested and certified) - conform to IEC 60947-3:2020	Sum	1		
3.1.1.4		See-through protective guard in front of cable terminations on isolator (include warning labels)	Sum	1		
3.1.1.5		Supply cable - 240mm ² SWA 4 Core Cable (3Ph + N) Must include lugs, glands and terminations	m	40		
3.1.2		LV MCC EQUIPMENT				
3.1.2.1		Removal of Existing LV Motor Control Centre (MCC), and	Sum	1		

	Transport to Johannesburg Water Stores				
3.1.2.2	MCC to house the VSDs, PLC, metering, isolators and ancillaries.	Sum	1		
3.1.2.3	3x 37kW VSDs	Each	3		
3.1.2.4	3x 132kW VSDs	Each	3		
3.1.2.5	Design/Configure/supply/deliver/Installation and Commissioning of PLC and HMI	Sum	1		
3.1.2.6	Wall mount 18 Way DB for small power	Each	1		
	Electric Motors				
3.1.3					
3.1.3.1	3 X IE3, 4Pole, 37kW, Induction, foot mount motors	Each	3		
3.1.3.2	3 X IE3, 4Pole, 132kW, Induction, foot mount motors	Each	3		
3.1.3.3	Modification of Base, Alignment and Coupling	Sum	1		
3.1.3.4	Motor cables	Sum	1		
TOTAL CARRIED TO SUMMARY					

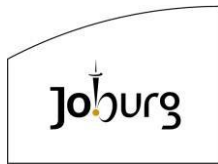
SCHEDULE 4: MECHANICAL ENGINEERING						
ITEM NO	PAYM. REFERS	DESCRIPTION	UNIT	QUAN-TITY	RATE	AMOUNT
4		SCHEDULE 4: MECHANICAL ENGINEERING REQUIREMENTS SUPPLY AND DELIVERY				
4.1.		<u>PART 1: PROCUREMENT, DELIVERY AND INSTALLATION</u>				
4.1.1.		Pumps				
4.1.1.1.		2nd stage pumps. 132 kW Cornel 6NHTR or similar (including pulley drives)	No	3		
4.1.1.2.		1st stage pumps. 37 kW KWP – K 125 - 500 or similar (incl. pulley drives)	No	3		
4.1.1.3.		Modification of Base, Alignment and Coupling	Sum	1		
4.1.1.4.		Sump recirculation pumps, Gorman-Rupp T3 or similar (excl. motor and drive)	No	1		
4.1.1.5.		Grinder - Pump station 1 (JWC model CCD3216 or similar)	No	1		
4.1.1.6.		Pump testing	Sum	1		
4.1.2.		Valves				
4.1.2.1.		DN200 Isolation gate valve	No	7		
4.1.2.2.		DN200 PN16 Swing check valves	No	4		

4.1.3.		Pipework				
4.1.3.1.		Pipework inspection and replacement	Sum	1		
TOTAL CARRIED TO SUMMARY						

SCHEDULE 5: TESTING AND COMMISSIONING						
ITEM No.	PAYM. REFERS	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5		SCHEDULE 5: TESTING AND COMMISSIONING				
5.1		CoC for electrical work done	Sum	1		
5.2		Cold commissioning of the installation	Sum	1		
5.3		Wet commissioning of the installation	Sum	1		
5.4		Project close-out	Sum	1		
5.5		Defects and liability period	Sum	1		
TOTAL CARRIED TO SUMMARY						

SUMMARY OF BILL OF QUANTITIES

DESCRIPTION	AMOUNT
SCHEDULE 1: Preliminary and General	R
SCHEDULE 2: Civil and Buildings Engineering	R
SCHEDULE 3: Electrical Engineering	R
SCHEDULE 4: Mechanical Engineering	R
SCHEDULE 5: Testing and Commissioning	R
Sub Total	R
ADD: 15% of above sub-total (1) for VALUE ADDED TAX (VAT)	R
TOTAL CARRIED TO FORM OF OFFER	R
DATE	SIGNATURE OF TENDERER



Contract No JW OPS 032/22
Kibler Park sewer pump station Upgrade
Volume 1 Tender and Contract
C2.2: Pricing Data



Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Johannesburg Water (SOC) Ltd



VOLUME 1

PART 3: SCOPE OF WORK

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2						
Part	T1	T2	C1	C2	C3	C4	C5	



Scope of Work

TABLE OF CONTENTS

Contents

C3 SCOPE OF WORK	1
GENERAL	1
SCOPE	1
DEFINITIONS	2
Technical Definitions and Terminology	2
ABBREVIATIONS.....	3
PORTION 1: PROJECT SPECIFICATION.....	5
PS1 DESCRIPTION OF THE WORKS	5
PS1.1 Employer's Objectives	5
PS1.2 Overview of the Works	5
PS1.3 Extent of the Works	5
PS1.4 Location of the Works.....	6
PS1.5 Temporary Works	6
PS2..... ENGINEERING	6
PS2.1 Employer's Design.....	6
PS2.2 Drawings.....	6
PS3..... PROCUREMENT	6
PS3.1 Preferential Procurement Procedures	6
PS3.2 Sub-contracting	Error! Bookmark not defined.
PS4..... CONSTRUCTION.....	7
PS4.1 Applicable Standards.....	7
PS4.1.1 Electrical works Standards	7

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.1.2	Civil works standards.....	7
PS4.1.3	Other Standards	8
PS4.2	Technical specifications.....	9
PS4.2.1	Electricity Supply	9
PS4.2.2	Drawings, Manuals, Training, Spares and Tools.....	9
PS4.2.3	INSPECTIONS, TESTS AND COMMISSIONING	13
PS4.2.4	FIRE EXTINGUISHERS, FIRST AID KITS, DANGER SIGNS AND NOTICES	15
PS4.2.5	MATERIALS, FINISHING AND PAINTING OF MATERIALS AND EQUIPMENT ..	16
PS4.2.6	FIXING OF MATERIALS	16
PS4.2.7	LV MOTOR CONTROL CENTRES	17
PS4.2.8	LV MOTOR STARTERS:.....	24
PS4.2.9	FIELD CONTROL STATIONS	33
PS4.2.10	LOW VOLTAGE POWER CABLES.....	34
PS4.2.11	CABLE SUPPORTS	35
PS4.2.12	LOW VOLTAGE DISTRIBUTION BOARDS	35
PS4.2.13	EARTHING AND LIGHTNING PROTECTION	37
PS4.2.14	INTERIOR AND EXTERIOR LIGHTING	38
PS4.2.15	POWER OUTLETS.....	39
PS4.2.16	LOW VOLTAGE MOTORS.....	40
PS4.2.17	CONNECTIONS TO MECHANICAL EQUIPMENT	40
PS4.2.18	ENGINE DRIVEN ELECTRICITY GENERATING SET	41
PS4.2.19	Cable construction	48
PS4.3	Work-related instructions	50
PS4.3.1	Return of removed cables and fittings and old MCC fittings	50
PS4.3.2	Damage to persons and property	51
PS4.3.3	Interference with property access and traffic.....	51
PS4.3.4	Contractor to keep site clean	51

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.3.5	Clearance of site on practical completion	51
PS4.3.6	Testing	51
PS4.3.7	Contractor's responsibility	51
PS4.3.8	No disturbance	52
PS4.3.9	Records and reporting	52
PS4.3.10	Job cards	52
PS4.3.11	Photographs	54
PS4.3.12	Reporting requirements	55
PS4.3.13	Locating of services	55
PS4.3.14	Access to disconnect and connect erf connections to secondary mains	55
PS4.4	Plant and materials	55
PS4.5	Construction equipment	56
PS4.6	Existing services	56
PS4.7	Site establishment, facilities available and required	56
PS4.8	Site usage	56
PS4.9	Permits and wayleaves	56
PS4.10	Alterations, additions, extensions and modifications to existing works	56
PS4.11	Inspection of adjoining properties	57
PS4.12	Water, sanitation and electricity for construction purposes	57
PS5.....	MANAGEMENT OF THE WORKS	58
PS5.1	Applicable SANS 1921 Standards	58
PS5.2	Programming	58
PS5.3	Sequence of the works	58
PS5.4	Software application for programming	58
PS5.5	Methods and procedures	58
PS5.6	Quality plans and control	58
PS5.7	Accommodation of traffic on public roads occupied by the Contractor	58

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS5.7.1	Accommodation of traffic	58
PS5.7.2	Access to properties	59
PS5.7.3	Transport Department requirements	59
PS5.8	Other contractors on site	59
PS5.9	Testing, completion, commissioning and correction of defects	59
PS5.10	Recording of Weather and Abnormal Rainfall	60
PS5.12	Key personnel	61
PS5.12.1	General	61
PS5.13	Management meetings	61
PS5.14	Forms for contract administration	61
PS5.15	Daily records	61
PS5.16	Bonds and guarantees	61
PS5.17	Payment certificates	61
PS5.18	Permits	61
PS6	FEATURES REQUIRING SPECIAL ATTENTION	62
PS6.1	Security	62
PS6.2	Work outside normal working hours	62
PS6.3	Sanitary facilities	62
PS6.4	Community liaison and community relations	62
PS6.5	Notices and warning to consumers	62
PS6.6	Continuity of service supply to customers	63
PS6.7	Conditions and procedures for service agencies	63
PS6.8	Generic labour intensive specifications	63
PS6.9	Acceptance of works and causes for rejection	63
PS6.9.1	Acceptance of implemented and associated works	63
PS7	HEALTH AND SAFETY FOR CONSTRUCTION WORK	64
PS7.1	Project-related Occupational Health and Safety Risks	64

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS7.2 Guide to risk assessments.....	65
PS7.2.1 Nine steps to Effective Risk Assessments	65
PS7.2.2 How serious is it?.....	65
PS8..... ENVIRONMENTAL MANAGEMENT PLAN	66
PORTION 2: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS	67
SANS 1200A: CIVIL ENGINEERING CONSTRUCTION: PRELIMINARY AND GENERAL	67
VARIATIONS	67
ADDITIONS	68
SANS 1200DA: CIVIL ENGINEERING CONSTRUCTION: EARTHWORKS (Small Works)	69
VARIATIONS	69
5.2.6.1 Freehaul	69
ADDITIONS	70
5.2.7 Backfilling	71
ADDITIONS	74

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

C3 SCOPE OF WORK

GENERAL

This section specifies and describes the supplies, services and engineering and construction works which are to be provided and any other requirements and constraints relating to the manner in which the contract work is to be performed.

SCOPE

The Scope of the Work is set out in two 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 standardised specifications and particular specifications, which are applicable to the contract.

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

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

DEFINITIONS

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.
- b) '**Service Provider**' shall mean either a consultant or contractor appointed to provide a particular service, i.e. investigations, design, labour provision and/or construction.
- c) '**VAT**' shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended.

Technical Definitions and Terminology

In general, the following definitions and terminology shall apply:

Armouring	A layer or layers of galvanized steel wires applied to the cable to provide mechanical protection or earth continuity, or both.
Bedding	A layer of extruded compound applied to the cable beneath the armouring.
Cable	A length of core or more cores assembled, that may or may not be provided with an overall mechanical covering.
Core	A single insulated conductor without protective covering.
Direction of lay	The lateral direction of inclination to the axis (either left or right) of the receding helix formed by wire or core in a cable or flexible cord.
P.V.C.	Polyvinyl chloride
Sheath	A solid extruded protective covering applied as the exterior of a cable or a flexible cord.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



ABBREVIATIONS

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

ASTM	: American Society for Testing and Materials
avi	: Audio Video Interleaved Format
BEE	: Black Economic Empowerment
BS	: British Standard
CCD	: Charge-coupled Device
CD	: Compact Disk
CE	: Civil Engineering Works
CIDB	: Construction Industry Development Board
CoJ	: City of Johannesburg
CLO	: Community Liaison Officer
COP	: Code of Practice for Work within the Road Reserve
DS	: Downstream
DVD	: Digital Versatile Disk
EB	: Electrical Engineering Works
ECSA	: Engineering Council of South Africa
EDA	: Enterprise Declaration Affidavit
EMP	: Environmental Management Plan
EPWP	: Expanded Public Works Programme
Ext	: Extension
GCC	: General Conditions of Contract
GIS	: Geographic Information System
HD	: High Definition
ISO	: International Organisation for Standardisation
JRA	: Johannesburg Road Agency
JW	: Johannesburg Water (SOC) Ltd

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

mov	: Quick Time Movie File Format
MPEG	: movie photographic experts group
mpg	: MPEG Video Format
SABS	: South African Bureau of Standards
SANS	: South African National Standard
SD	: Standard Definition
SDR	: Standard Dimension Ratio
SOP	: Standard Operating Procedure
VAT	: Value Added Tax
MCC	: Motor Control Centre
VSD	: Variable Speed Drive
LV	: Low Voltage
MV	: Medium Voltage

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PORTION 1: PROJECT SPECIFICATION

PS1 DESCRIPTION OF THE WORKS

PS1.1 Employer's Objectives

The Employer's objective, as the water and sanitation service provider for the CoJ, is to ensure the effective delivery of water and sanitation services being supplied to customers within his area of jurisdiction, be of good quality that is accessible, reliable and efficient in an environmentally responsible/sustainable way.

PS1.2 Overview of the Works

The project requires the Design, Supply, deliver, installation, testing and commissioning of the Electrical and Mechanical equipment of Kibler Park Sewer Pump Station, within the Employer's area of jurisdiction as once off contract. The project is estimated to be completed within six (06) months.

PS1.3 Extent of the Works

The Contractor shall be required to design, procure (supply), deliver, install, test, commission and uphold during the trial operation period and the defects notification period of the following equipment and materials:

- Low Voltage (LV) Main incomer panel and isolator.
- 240mm² x 4 core SWA cable;
- Low voltage (LV) squirrel cage, induction motors (3 x 37kW Motors and 3 x 132kW motors)
- Low voltage (LV) motor control centers with VSD starters (3 x 37kW VSDs and 3 x 132kW VSDs)
- Field control stations.
- LV power cables.
- Busbar trunking systems.
- Cable supports.
- LV distribution boards.
- Interior and exterior lighting.
- Power outlets.
- Connections to mechanical equipment.
- LV make off, termination kits and Lugs
- Make provision of site establishment and security personnel
- Make provision of Safety Requirements
- Issue a CoC for electrical work done
- Marking and labelling of the cables.
- Pre commissioning tests to be carried out on the cables
- Isolate inlet into the pump station
- Removal and replacement of the existing pipes, isolating valves and non-return valves.
- Removal and replacement of sluice gate in the between the sump and inlet
- Install and commission new centrifugal pumps
- Supply, install and commission a muncher on the inlet to the pump station
- Refurbish all existing pump set base plinths
- Refurbish the stairway and safety rails

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The extent of works required for each installation shall be issued to the Contractor by means of job cards.

Contractors shall also be responsible for the management and tracking of issued job-cards. Contractors will receive a list of all issued job cards and are expected to return all issued works orders (either as complete or a 'call out'). – As described in **PS4.2.12**.

PS1.4 Location of the Works

The works is located at the Kibler Park Sewer Pump Station in Kibler Park, Kotze Road, GPS Coordinates: S26 19 35.9 E28 00 43.1

PS1.5 Temporary Works

Temporary works shall:

- Include the works required to have site establishment, security personnel for the duration of the works.

The Contractor shall further note that stockpiling of materials, plant, excavated material or any other construction related infrastructure shall NOT be allowed in locations that may interfere with the operations of the Employer and the public in general.

PS2 ENGINEERING

PS2.1 Employer's Design

The Contractor shall comply with all applicable local and international standards and guidelines as mandated by the Employer, SABS, and the supplier and/or manufactures of applicable materials and goods.

All fittings must be approved by Johannesburg Water prior to installation.

All materials and fittings are to be in line with Johannesburg Water standard specifications and guidelines.

PS2.2 Drawings

No construction drawings shall be issued. As built drawings issued and shall be accompanied by locality maps.

PS3 PROCUREMENT

PS3.1 Preferential Procurement Procedures

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

- Empowerment and Preferential Procurement (JW10).

These schedules contain all requirements with regard to preferential procurement.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4 CONSTRUCTION

PS4.1 Applicable Standards

PS4.1.1 Electrical works Standards

All materials and equipment shall be new and of the standard and quality specified.

Tenderers shall ensure that they are fully acquainted with the contents of the applicable standard electrical Specifications.

The design and manufacture of equipment and the complete installation shall be carried out and tested in accordance with the latest issue or amendments of the following regulations, as applicable.

- SANS 10142 – The Code of Practice for wiring of premises as amended.
- The Occupational, Health and Safety Act, (Act 85 of 1993).
- The local Municipal by-laws and regulations and regulations of the local supply authority.
- The Fire Brigade Services Act, 2000 (Act 14 of 2000).
- The regulations of Telkom (S.A) Ltd.
- The National Building Regulations and Building Standards Act, (Act 29 of 1996).
- The Electricity Act, (Act 88 of 1996).

Cables shall be strictly manufactured in accordance with the requirements of the latest editions of the following standards:

SANS 1507: Electrical cables with extruded solid dielectric insulation for Fixed Installations

SANS 1411 : Materials of insulated electric cables and flexible cords
SANS 1520 : Flexible electrical cables for use in mines
SANS 10142-1 : The Wiring of Premises Part 1 – Low Voltage Installations
IEC 173 : Flexible cords
IEC 245 : Rubber insulated cables
IEC 287 : Current rating calculations
IEC 540 : Insulation tests
VDE 0250 : Standard for insulated wires and flexible cables

PS4.1.2 Civil works standards

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

SANS Description

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

1200 A	: General (1986)
1200 DA	: Earthworks (Small works) (1988)
1200 GE	: Precast Concrete (1984)
1200 L	: Medium-pressure pipe lines (1983)
1200 LB	: Bedding (Pipes) (1983)
1200 LF	: Erf connections water

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

PS4.1.3 Other Standards

Other Standard Specifications for applicable to this Contract shall be:

- ASTM C.309 Type 1 (Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete)
- City of Johannesburg Metropolitan Municipality, Public Road and Miscellaneous By-laws, Code of Practice for work in the road reserve (COP), Latest Version.

NOTE: 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

- South African Road Traffic Signs Manual, Chapter 13.
- ASTM C150/C150M-09 Standard Specification for Portland cement.
- ASTM E23 - 07ae1 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials.
- ISO 2531 (1998) ductile iron pipes, fittings, accessories and their joints for water or gas applications.
- ISO 4179 (2005) Ductile iron pipes and fittings for pressure and non-pressure pipelines - Cement mortar lining.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4.2 Technical specifications

PS4.2.1 Electricity Supply

The pump station is equipped with an existing electricity supply from the local supply authority City Power.

The relevant electrical parameters at the points of supply to the pump station are as follows:

PARAMETER	PUMPSTATION
Supply voltage	400 V
Frequency	50 Hz
Fault level (3 phase)	TBA by City Power and Eskom
Voltage regulation	± 5%
Voltage dip limit (maximum allowed)	3%

PS4.2.2 Drawings, Manuals, Training, Spares and Tools

The requirements of Standard Specification E200.7 shall be complied with, as varied or added to by this Project Specification.

PS4.2.2.1 Drawings

Equipment Drawings shall be submitted in hard copy and electronically in .pdf format as specified in the Standard Specifications.

The approval of Drawings shall not relieve the Contractor of this responsibility to supply the equipment according to the requirements of this Specification.

The following Drawings shall be submitted by the Contractor prior to installation work:

- Motor Control Centre schematic diagrams and workshop drawings;
- Main incomer panel schematic diagrams,
- MCC termination diagrams;
- Field station workshop drawings;
- Busbar trunking drawings;

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The following procedure for the approval of Drawings shall be strictly followed:

- Contractor prepares preliminary drawings for approval;
- Contractor checks Drawings for compliance with all requirements of the Specification and submits 2 copies, signed off as checked, to the Engineer/ JW Authorised person for approval (including one electronic copy);
- Engineer/ JW authorised person returns a copy, stamped/signed as approved or returned for resubmission, to the Contractor;
- After the preliminary documents have been approved/returned for resubmission, contractor makes the adjustments as per the engineer comments/prepares the detailed designs for final approval;
- Engineer/ JW authorised person returns a copy, stamped/signed as approved or returned for resubmission, to the Contractor;
- Manufacture/procurement of equipment commences after approval of Drawings by the Engineer/ JW Authorised person;

A complete set of "As Built" Drawings, certified as accurate, shall be submitted to the Engineer/ JW authorised person immediately after completion of the Installation (including one set of electronic copies).

Layout Drawings, issued during Tender stage, shall be marked up by the Contractor showing all dimensions to buildings, including the positions of underground cables.

PS4.2.3 Pipes

PS4.2.3.1 Material

All pipe work to be steel and copon coated, class 16

PS4.2.3.2 Colour Coding

Pipework to be green

PS4.2.3.3 Joints

Butt welded joints are favourable for long pipe sections, however flanged sections are also allowed.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.4 Valves

PS4.2.4.1 Types

Isolating valves: Wedge type gate valves

Rated Pressure	16bar
Flanges	SANS 1123 T1600/3
Gate Type	Wedge
Closing Direction	Anti-clockwise

Non-Return Valve

Rated Pressure	16bar
Flanges	SANS 1123 T1600/3
Closing Type	Single door, swing type
Closing Direction	Anti-clockwise
Method of closing	Gravity, with counterweight

PS4.2.4.2 Operation and Maintenance Manual

Two copies of the O & M manual shall be issued to the Engineer prior to commissioning of the Works, and the Operational Acceptance Period shall not be deemed to have commenced until the manual has been issued. Before the Certificate of Completion is issued (after the successful completion of the Operational Acceptance Period) seven copies of the final approved version of the O & M manual shall be issued to the Engineer.

The manual shall be of a standard acceptable to the Engineer and shall be subject to his approval. At least one set shall contain original copies.

Binders with hard plastic covers and ring spring clip holders shall be used. To prevent damage to the content binders shall not be over-filled. A spare binder shall be provided for every three used, marked with the contract information.

Title labels which include Contract number, title, location, Contractor's name as well as the plant or process description together with volume number and contents shall be fixed on the front cover as well as on the spine of the binders.

Manuals shall be in English only, with sections of equipment arranged by labeled dividing separator sheets. Where standard literature is obtained from suppliers or manufactures, this shall be neatly photocopied in A4 size, with the applicable sections clearly marked, omitting duplicate sections in languages other than English.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Comprehensive indexes shall be included, with separate sections (with their own index) where required, as follows:

- Contact details of: consulting engineer, main contractor; all relevant sub-contractors.
- Details of the electrical equipment supplied including the name and address of the supplier, as well as descriptive and technical literature, giving performance and service information.
- Full details of control and protection systems including logic sequence charts, logic controller programs, trip settings, etc.
- Circuit diagrams.
- Dimensioned panel layout drawings.
- Cable schedules for power, control and instrumentation cables. This shall include the cable type, start and finish points, route length, duty load, size, voltage drop, number of cores, number of cores used and gland size. For cable voltages above 400 Volts, the schedule shall also include the purchase details, specification and date of manufacture.
- Record (as-built) drawings referenced to the above.
- Spares list.
- A comprehensive schedule of routine maintenance actions by time period for the system as installed.
- Test certificates for individual items of equipment and for complete sections of the Works as appropriate.
- This includes Certificates of compliance for the electrical installations, Certificate of compliance and test results of Earthing installations, etc.
- Comprehensive hazard identification and risk assessment for all equipment and/or substances provided under this contract toward assisting the employer fulfil its responsibilities in terms of the Occupational health and Safety Act (Act No 85 of 1993) and in particular Section 8(2)(d).

PS4.2.4.3 Training

The Contractor shall arrange for the technical staff members of the Employer to be trained in the operation and routine maintenance of all the electrical equipment provided under this Contract. The training shall be provided by way of on-site formal training sessions by the equipment suppliers, who shall certify that the training has been completed satisfactorily.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.4.4 Spares and Tools

Spares and tools shall be provided as specified in and as called for in the Project equipment specifications in this Specification.

In addition to any spares specifically called for in this Specification, the Tenderer shall recommend any additional spares which he considers the Employer should hold. The prices of these spares must not be included in the tender price, but should be separately listed and priced in the returnable schedules. Prices for these spares shall include delivery to and off loading at the site. Items may be ordered in full or in part before the end of the maintenance period.

PS4.2.5 INSPECTIONS, TESTS AND COMMISSIONING

In addition to the requirements of Standard Specification E200.8, the following requirements shall be complied with:

PS4.2.5.1 Inspections

(a) Inspections of all switchboards and panels may be carried out by the Engineer at his discretion at the following holding points prior to release:

- after sheet metal fabrication, before painting
- after painting, before installation of equipment
- After assembly, before factory testing.

(b) All cable trenches in ground shall be inspected by the Engineer prior to cables being laid and trenches being backfilled.

(c) For equipment being manufactured in the RSA, the Engineer and a representative of the Employer will carry out factory inspections and the Contractor shall bear all travel and accommodation costs associated with the inspections

(d) During construction the onus will be on the contractor to comply with the following:

- Contractor checks and inspects equipment during all stages;

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Contractor presents Engineer with written confirmation that all equipment is in full compliance with the Specification and has been checked, inspected and fully tested. This confirmation, signed and dated by the Contractor, shall accompany a written request for the Engineer to witness final inspection and testing of the equipment (e.g. distribution board);
- During the Engineer's inspections a fault list will be drawn up, if necessary, and handed to the Contractor;
- Only after satisfactory rectification of the fault list and subsequent re-inspection or testing, may the equipment be dispatched to site;
- The Contractor shall ensure that a full copy of the Specification, as well as an approved, signed copy of the Drawings, are at hand during all inspections and testing.

PS4.2.5.2 Tests

The tests listed below shall be carried out on Site by the Contractor and witnessed by the Engineer and a representative of the Employer. Pricing items have been included in the Bill of Quantities for site tests. Factory tests shall be carried out in accordance with the Project equipment and material specifications in this Specification, and routine test certificates shall be provided. **Type test certificates, issued by internationally accredited test authorities, shall be provided for all MV equipment.** The cost of all factory routine and type tests (where existing certification is not available) shall be included in the supply prices for the equipment.

PS4.2.5.2.1 Switchgear:

- visual checks (including paintwork)
- impedance measurements
- insulation resistance measurement
- current and voltage transformer tests
- proving of protection scheme
- high voltage tests
- circuit breaker operation tests
- control scheme test
- Load testing.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2						
Part	T1	T2	C1	C2	C3	C4	C5	



Scope of Work

PS4.2.5.2.2 LV Cables:

- insulation resistance test (after jointing and termination)
- Phase rotation test (after jointing and termination).

PS4.2.5.2.3 Earthing:

- earth electrode resistance measurements
- bonding conductor continuity tests
- Soil resistivity tests.

PS4.2.5.2.4 Variable frequency Drives (VSD):

- All inspection and testing procedures shall be developed and controlled under the guidelines of the Supplier's quality system and must be registered to ISO 9001 and regularly reviewed and audited by a third party registrar.
- The VSD shall be factory pre-wired, assembled and tested as a complete package.

PS4.2.5.2.5 Standby Diesel Generators

- The requirements for site tests are as specified in Volume 1 / T2.2 Returnable Schedules / Technical data Sheet No 6 / Item 15

PS4.2.6 FIRE EXTINGUISHERS, FIRST AID KITS, DANGER SIGNS AND NOTICES

Danger signs and notices shall be provided in accordance with Standard Specification E200.9.

All danger signs and safety notices shall be in English. Operating notices, signs and labels that are not safety related shall also be in English. Signs / notices with approved symbols may be used in the place of text signs.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Fire extinguishers shall be provided in the Pump Room at the pump station in accordance with Standard Specification E200.9.

PS4.2.7 MATERIALS, FINISHING AND PAINTING OF MATERIALS AND EQUIPMENT

PS4.2.7.1 Materials

Materials shall be provided in accordance with Standard Specification E201 and shall be suitable for the site conditions set out in Volume 2.1 Section 1.

All mild steel shall be hot-dip galvanized after fabrication, and no cutting or drilling shall be done on site.

PS4.2.7.2 Finishing and Painting

Finishing and painting shall be in accordance with Standard Specification E202. All 3CR12 material shall be degreased, with any sheared edges, welds or surfaces subjected to any form of heat treatment pickled and passivated. If there is any mill scale on the material, the 3CR12 shall be non-metallic blast cleaned to SA2½, prior to degreasing.

A primer coat of strontium chromate epoxy primer or approved alternative shall be applied to a minimum dry film thickness (DFT) of 30 µm. A final coat of epoxy / polyester powder coating shall be applied by electrostatic spray and baked in accordance with the manufacturer's specification.

This final coat shall be in the colour as specified, with a minimum DFT of 50 µm, but not more than 100 µm.

The suppliers or manufacturers shall furnish paint thickness test certificates for all materials that are epoxy powder coated.

All galvanizing shall be hot-dip zinc galvanized coating done in accordance with SANS 121.

The hot-dip galvanizers shall be permit holders in terms of the SABS Mark Scheme or equivalent.

PS4.2.8 FIXING OF MATERIALS

Materials shall be fixed in accordance with Standard Specification E203. All fasteners shall be hot-dip galvanized or stainless steel. No electro-plated or zinc plated fasteners will be allowed.

Fixing to structures and concrete shall be effected by stainless steel bolts and nuts, or stainless steel threaded rod used in conjunction with an approved chemical anchor.

Where there is a possibility of electro-galvanic reaction (e.g. between stainless steel and galvanizing) the Contractor shall make use of suitable insulating washers of rubber, teflon or similar material.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.9 LV MOTOR CONTROL CENTRES

PS4.2.9.1 General

A free-standing main Incomer panel and LV Motor Control Centre (MCC) shall be provided inside the pump room. Single-line diagrams and proposed general arrangements are shown for each Pump station on the Drawings.

PS4.2.9.2 Standard Specifications

The MCC's shall comply with SANS 60439-1, SANS 1973-1 and the following Standard Specifications as varied by this Particular Specification:

- E204 Enclosure for MCCs
- E205 : LV switchgear and control gear
- E206 : Busbars
- E207 : Current transformers
- E208 : LV motor protection
- E209 : Wiring in MCCs
- E210 : Wiring and cable terminations
- E211 : Glands and gland plates
- E213 : Switchboard accessories
- E214 : Nameplate and labels
- E215 : Metering and indication equipment

PS4.2.9.2.1 Enclosure for MCC

The MCC enclosure shall be fabricated fully from 3CR12 sheet metal, with either 3CR12 or cast aluminium frames.

Compartments in the MCC shall be sized in accordance with the proposed general arrangement drawing.

The pump station MCC shall be constructed to From Type 3b or 4a as per SANS IEC 60439-1.

Doors shall be provided on the front of the pump station MCC.

An interlocking device shall be provided so that the front door of a compartment cannot be opened unless the circuit breaker / isolator is in the off position, and so that the circuit breaker / isolator cannot be switched on unless the door or cover is locked.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The top of the enclosure for the pump station MCC shall be divided into a busbar chamber and a wiring channel in accordance with Clause 2.4(d) of Standard Specification E204.

The pump station shall be constructed for cable entry from below, and shall have front access only.

The ingress protection shall be as follows:

- IP44 with doors closed
- IP2X with doors open
- IP2X between compartments.

PS4.2.9.2.2 Switchgear and Control gear

The motor ratings given on the single line diagram are the Engineer's estimates, which have been used for systems design purposes. Should the ratings of motors offered in the Tender differ from the Engineer's estimates, then the switchgear and control gear shall be sized to suit the motors offered in the tender and priced accordingly.

All MCCBs shall be lockable in the "off" position, but only with the use of an integral locking device.

Selector switches shall be provided on the front door of each drive's compartment: Switchboard Accessories for selecting manual / automatic / remote (where required) operation modes. In the manual mode the control pushbuttons on the MCC (local) and at field control stations (remote) shall be operational. In the automatic mode, the control pushbuttons shall not be operational, and control of the drives shall be transferred to the remote terminal unit (telemetry), controlling the drives.

Where standby motor-driven equipment is provided, selection shall be done by the remote terminal unit input for duty / standby selection of the drive compartments as required to implement the specified control philosophy.

PS4.2.9.2.3 Busbars

The busbars in the MCC shall be rated in accordance with the single-line diagram.

The specified covering of the busbars with heat-shrinkable material shall only apply to distribution busbars (i.e. droppers to functional units).

The installation of aluminium busbars will be required to connect equipment in the Northcliff Pump station.

1000 amp busbar shall be installed from the newly installed generators to the new MCC.

1600 amp busbar shall be installed from the newly installed main LV panel to the new MCC.

PS4.2.9.2.4 Main incomer

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

240mm² SWA 4 Core Cable (3Ph + N) – 30 meters with see-through protective guard in front of cable terminations on isolator (include warning labels)

Panel with Mild steel IP65 floor standing enclosure (conform to IEC 61439) - single door, panel base min. 100mm. Top busbar system (bus way) - conform to IEC 60439-2:2000

Busbar termination from isolator to busbar trunking system (bus way)

3Ph 1250A Isolator with door interlocking handle (load tested and certified) - conform to IEC 60947-3:2020

The contractor is responsible for measurements on site to determine the busbar lengths required. The contractor requires to provide a fully functional system. The outdoor sections needs to be provided and priced complete with weatherproof covers etc.

PS4.2.9.2.5 Motor Protection

All motor starters shall be equipped with the motor protection required in terms of Standard Specification E208, except as varied below.

Earth leakage protection (rated at 250mA) shall be provided on all motor starters for immiscible / submersible equipment to operate the shunt trip of the drive's circuit breaker.

Where the thermal overload relays are mounted inside MCC compartments, an electrical reset facility shall be provided with a pushbutton on the front door of the compartment.

Separate thermistor relays and/or RTD controllers need not be provided if the motor protection relays can accept these inputs.

Each motor starter shall provide a supply to the anti-condensation heater of its associated motor (where fitted). The supply shall be taken from a dedicated earth leakage circuit breaker and shall be turned on automatically when the motor is not running.

PS4.2.9.2.6 Wiring in MCCs

The color of the MCC wiring shall be as follows for circuits other than power circuits:

220 V ac control live	:	Brown
220 V ac control neutral	:	Black
+24 V dc control	:	Orange
-24 V dc control	:	Violet / Purple

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Wiring to lamps	:	Red
CT circuits	:	Blue
PLC digital inputs	:	Grey
PLC digital outputs	:	Pink
PLC analogue inputs	:	Red / black (twisted pair)
PLC analogue outputs	:	White / black (twisted pair)

PS4.2.9.2.7 Wiring- and Cable Terminations

Power cables shall be terminated directly onto circuit breakers or contactors (as applicable) and shall not be connected up via separate terminal strips (i.e. Clause 3 of Standard Specification E210 shall not be applicable).

Power cables shall be labeled externally to the MCC to indicate the equipment being fed. Incoming supply cables shall also be labeled to indicate the source of supply.

PS4.2.9.2.8 Glands and Gland Plates

All cable glands shall be of the nickel-plated brass type and fitted with waterproof neoprene shrouds.

Gland plates in the pump station MCC shall be provided for cable entry from below. Gland plates shall be mounted at 400mm above finished floor level and shall be bolted to robust brackets welded to the framework of the MCC.

Gland plates shall be manufactured with a minimum thickness of 2mm. Where single core cables are terminated, the gland plates shall be manufactured from non-ferrous material of adequate thickness.

PS4.2.9.2.9 Switchboard Accessories

PS4.2.7.2.9.1 Control Push Buttons

Motor control compartments shall be equipped with control push buttons as needed.

Control push buttons shall be of the round, flush, spring-loaded type of 22,5mm diameter.

Push buttons shall be colour-coded as follows:

Emergency stop	:	Red (mushroom twist release – lockable)
----------------	---	---

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Lamp test	:	Black
Reset	:	Blue
Start	:	Green
Stop	:	Red
Open / close	:	Black on White
Up / down / left / right	:	Black on White
Forward / reverse	:	Black on White

PS4.2.7.2.9.2 Indicator Lights

Motor control compartments shall be equipped with indicator lights as needed:

Indicator lights shall have lamps comprising a cluster of four light-emitted diodes in a common housing. A light's lens shall be of the specified colour and shall be least 20mm in diameter. The lights shall be clearly visible through an angle of 180° in a brightly lit room (500 – 600 lux) and the contrast between an energized condition and a de-energized condition shall be clearly visible from all sides as well as from the front.

Indicator lights shall be colour-coded as follows:

Indication	Colour	Example / Comment
Local / Auto / SCADA Mode	White	
Busbar Alive	White	
Closed	Red	Valves, penstocks
Differential Pressure – HIGH	Amber	
Differential Pressure – NORMAL	Green	

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Indication	Colour	Example / Comment
Earth Fault	Amber	
Emergency stop	Amber	
Mechanical Seal Failure Warning	Amber	Sub- / Immersible Pumps
Moisture in Coolant	Amber	Sub- / Immersible Pumps
Moisture / Water Ingress	Amber	
Motor Winding Over Temperature	Amber	May be flashing AMBER
Open	Green	Valves
Overload	Amber	
Running	Green	
Starter Alive (Circuit Healthy)	Green	
Stopped & Power Available	Red	
Tripped	Amber	

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.7.2.9.3 Name Plates and Labels

The requirements of the applicable SANS specification relating to name plates and labels shall take precedence over the Standard Specification.

PS4.2.7.2.9.4 Metering and Indication Instruments

Metering and indication instruments shall be provided in accordance with the single-line diagram for the MCCs.

The size of ammeters and voltmeters shall be 96mm x 96mm on compartment doors that are 600mm x 600mm or larger in size, and 72mm x 72mm on all smaller compartment doors.

Run hour meters shall be provided for all motor starter compartments to match the ammeters and voltmeters in size. The run hour meter shall count to 99 999.9 before returning to zero, and it shall not be possible to reset the meter.

PS4.2.9.2.10 Test Reports

The switchboard manufacturer shall be in possession of a Permit to Apply Certification Mark, issued by the South African Bureau of Standards (or approved equivalent), in terms of the Specific Permit Conditions of SANS 1973-1 and have evidence of all the seven type tests as required in IEC 60439-1 and SANS 1973-1.

Only authorized holders of these test reports may design and construct the switchboards.

Copies of relevant test reports shall be made available to the Engineer upon request.

The Contractor shall re-torque the pump station MCC busbars on site once fully populated and connected up, prior to switch-on, and shall issue a certificate to the Engineer confirming that the busbar arrangement is still to the same standards as at the time of the initial construction and is safe for operation.

Suppliers/Manufacturers of switchboards equal to or below 10 kA shall be in possession of a Permit to Apply Certification Mark, issued by the South African Bureau of Standards (or approved equivalent), in terms of the Specific Permit conditions of SANS 1973-3.

PS4.2.9.2.11 Installation

The pump station MCC shall be installed over a cable trench in the MCC Room as shown on the layout drawings.

Cable trench bridging supports shall be provided to support the pump station MCC in accordance with Clause 4 of Standard Specification E204.

PS4.2.7.2.9.5 Measurement and Payment

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The single-line diagrams, typical motor starter schematic and MCC accessories schedule have been provided to guide the Contractor in his design of the MCCs. However, the prices for the supply of MCCs shall include for all equipment / components / materials required to comply with this Particular Specification and referenced standard specifications.

The price for the installation of the MCC shall include the provision of cable trench bridging supports

PS4.2.10 LV MOTOR STARTERS:

PS4.2.10.1 General

400 V low voltage Variable frequency converters (VFCs) shall be provided for the pump motors at each pump station. The VFCs shall enable smooth starting of motors up to rated speed which shall be controlled by the PLC via Modbus TCP. The design of the starters shall allow for the supply authority's voltage dip limit to be met, whilst allowing the motor to develop adequate starting and accelerating torque.

The VFCs shall be fed from dedicated motor feeder circuit breakers in the LV switchboard. These VFCs shall be connected as shown on the LV single-line diagrams.

PS4.2.10.2 Equipment Specification

Low voltage VFCs shall be provided in accordance with the single-line diagram and Standard Specifications E 242

This specification defines the minimum technical requirements for the design, manufacture, performance and testing of a low voltage electronic VFCs.

The purchaser may require from the supplier to show the capability of the quoted equipment in meeting the specification and provide a reference list.

The supplier must clearly state in his quotation any deviation from the specification.

The Variable Frequency Drive (VSD) system shall contain all components required to meet the performance, protection, safety and certification criteria of this specification.

The VFCs shall be selected to match their associated motors and loads with respect to voltage, speed range, power and load torque characteristic.

The VFCs shall be equipped with line filters in order to reduce harmonics.

The system shall be Type 2 co-ordination with life contactor and must be rated at AC3 to allow pump to start D.O.L. if VFC fails.

The doors of the MCC compartments housing VFCs shall be fitted with the same control and indication equipment as those for fixed speed drives, but with the addition of VFC faults indication lights.

The MCCs with the VFCs shall be fully tested at the manufacturer premises and inspected by the Engineer before release for installation on site.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

All LV VFCs for standard applications shall be selected so as to ensure:

- Voltage tolerance of 400V (+10% - 10%)
- Operation on systems earthed via soled earth
- Communications with central control system
- Hardwired emergency stop facilities to contactor in drive functional unit
- VFC short circuit protection shall be provided to meet OEM requirements (fast-acting fuses or current limiting circuit breakers)
- The VFC shall be suitable for centrifugal pumps with a squared torque characteristic.
- Heat dissipation to be directly out of the substation by means of air ventilation systems wherever possible.

PS4.2.10.2.1 General

- Mains voltage: 400 V +10% - 10%
- Nominal current: 250 A continuous
- Frequency: 50 Hz
- Ambient temperature: 0-50° C. Relative humidity: 95% non-condensing
- Communication: Modbus TCP

The sizing of the VFC is based on the Engineer's estimated size of the pump motors.

Should the ratings of motors offered in the Tender differ from the Engineer's estimates, then the switchgear and control gear shall be sized to suit the motors offered in the tender and priced accordingly.

The manufacturers shall either be Emerson, Zest, Mitsubishi, and Schneider or equally approved.

PS4.2.10.2.2 Scope of Supply

Hardware

- Utilize diode bridge or SCR bridge on the input rectifier.
- Utilize DC bus inductor on all six-pulse VSDs only.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- c) Utilize switching logic power supply operating from the DC bus.
- d) Incorporate phase to phase and phase to ground MOV protection on the AC input line.
- e) Utilize gold plated plug-in connections on printed circuit boards.
- f) Microprocessor based inverter logic shall be isolated from power circuits.
- g) Utilize latest generation IGBT inverter section.
- h) Inverter section shall not require commutation capacitors.
- i) Ethernet communication capability.
- j) Battery receptacle for Lithium battery power to the Real Time Clock.
- k) Additional DPI port for handheld and remote HMI options.
- l) Dedicated Digital Input for hardware enable.
- m) Conformal coated printed circuit boards.
- n) Optional on-board 24V DC Auxiliary Control Power Supply.

Control Logic

- a) Ability to operate with motor disconnected.
- b) Provide a controlled shut down, when properly protected, with no component failure in the event of an output phase to phase or phase to ground short circuit. Provide annunciation of the fault condition.
- c) Provide multiple programmable stop modes including Ramp, Coast, DC-Brake, Ramp-to-Hold, Fast Braking, and Current Limit Stop.
- d) Provide multiple acceleration and deceleration rates.

Device Logix Control

- a) Ability to control outputs and manage status information locally within the VSD.
- b) Ability to function stand-alone or complimentary to supervisory control.
- c) Ability to speed reaction time by processing in the VSD.
- d) Ability to read inputs/write outputs and exclusively control the VSD.
- e) Ability to provide an option for decision making if communication is lost with main controller.
- f) Ability to control other VSDs via a peer-to-peer EtherNet/IP network.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2						
Part	T1	T2	C1	C2	C3	C4	C5	



Scope of Work

Motor Control Modes

- a) The drive shall be supplied with a Start-up and Auto-tune mode.
- b) The V/Hz mode shall be programmable for fan curve or full custom patterns.
- c) Capable of Open Loop V/Hz.

Current Limit

- a) Programmable current limit from 20 to 160% of rated output current.
- b) Current limit shall be active for all drive states: accelerating, constant speed and decelerating.
- c) The drive shall employ PI regulation with an adjustable gain for smooth transition in and out of current limit.

Acceleration / Deceleration

- a) Accel/Decel settings shall provide separate adjustments to allow either setting to be adjusted from 0 to 3600 seconds.
- b) A second set of remotely selectable accel/decel settings shall be accessible through digital inputs.

Speed Profiles

- a) Programming capability shall allow the user to produce speed profiles with linear acceleration/deceleration or "S Curve" profiles that provide changing accel/decel rates.
- b) S Curve profiles shall be adjustable.

Adjustments

- a) A digital interface can be used for all set-up, operation and adjustment settings.
- b) All adjustments shall be stored in non-volatile memory.
- c) No potentiometer adjustments shall be required.
- d) Non-volatile memory for factory default values shall be provided.
- e) Software must be available for trending and diagnostics, as well as online and offline programming functionality.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Process PID Control

- The drive shall incorporate an internal process PI regulator with proportional and integral gain adjustments as well as error inversion and output clamping functions.
- The feedback shall be configurable for normal or square root functions. If the feedback indicates that the process is moving away from the set-point, the regulator shall adjust the drive output until the feedback equals the reference.
- Process control shall be capable of being enabled or disabled with a hardwire input. Transitioning in and out of process control shall be capable of being tuned for faster response by preloading the integrator.
- Protection shall be provided for a loss of feedback or reference signal.

Skip Frequencies

- Three adjustable set points that lock out continuous operation at frequencies which may produce mechanical resonance shall be provided.
- The set points shall have a bandwidth adjustable from Maximum Reverse Speed to Maximum Forward Speed.

Fault Reset / Run

- The drive shall provide up to nine automatic fault reset and restarts following a fault condition before locking out and requiring manual restart.
- The automatic mode shall not be applicable to a ground fault, shorted output faults and other internal microprocessor faults.
- The time between restarts shall be adjustable from 0.5 seconds to 30 seconds.

Run on Power Up

- A user programmable restart function shall be provided to allow restart of the equipment after restoration of power after long duration power outages. Restart time dependent on presence of incoming signal.

Fault Memory

- The last 32 fault codes shall be stored and time stamped in a fault buffer.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- b) Information about the drive's condition at the time of the last fault such as operating frequency, output current, dc bus voltage and twenty-seven other status conditions shall be stored.
- c) A power-up marker shall be provided at each power-up time to aid in analysing fault data.
- d) The last 32 alarm codes shall be stored and time stamped for additional troubleshooting reference.

Overload Protection

- a) The drive shall provide internal class 10 adjustable overload protection.
- b) Overload protection shall be speed sensitive and adjustable.
- c) A viewable parameter shall store the overload usage.

Auto Economizer

- a) An auto economizer feature shall be available to automatically reduce the output voltage when the drive is operating in an idle mode (drive output current less than programmed motor FLA). The voltage shall be reduced to minimize flux current in a lightly loaded motor thus reducing kW usage.
- b) When the load increases, the drive shall automatically return to normal operation.

Flying Start

- a) The drive shall be capable of determining the speed and direction of a spinning motor and adjust its output to "pick-up" the motor at the rotating speed. This feature is disabled by default.

Reference Signals

- a) The drive shall be capable of using the following input reference signals:
 - Analog inputs
 - Preset speeds
 - Remote potentiometer
 - Digital MOP
 - Human Interface Module

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Communication networks
- IGBT Temperature

Loss of Reference

- The drive shall be capable of sensing reference loss conditions.
- In the event of loss of the reference signal, the drive shall be user programmable to the following:
 - Fault the drive and coast to stop.
 - Issue a minor fault - allows the drive to continue running while some types of faults are present.
 - Alarm and maintain last reference.
- When using a communications network to control the drive, the communications adapter shall have these configurable responses to network disruptions and controller idle (fault or program) conditions:
 - Fault
 - Stop
 - Zero Data
 - Hold Last State
 - Send Fault Configuration

Metering

- At a minimum, the following parameters shall be accessible through the Human Interface Module, if installed:
 - Output Current in Amps
 - Output Voltage in Volts
 - Output Power in kW
 - Elapsed MWh
 - DC Bus Voltage
 - Frequency

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Heatsink Temperature
- Last eight faults
- Elapsed Run Time

Faults

a) At a minimum, the following faults shall be accessible through the Human Interface Module:

- Power Loss
- Under voltage
- Overvoltage
- Motor Overload
- Heat Sink Over-temperature
- Maximum Retries
- Phase to Phase and Phase to Ground Faults

Real-Time Clock

- a) Shall be capable of providing time stamped events.
- b) Shall have the ability to be set locally or via a remote controller.
- c) Shall provide the ability to be programmable for month, day, year and local time zones in HH:MM:SS.

PS4.2.10.2.3 VSD Packaged system

Ratings

- a) **Voltage**
- Capable of accepting nominal plant power of 400V AC, 50Hz
 - The supply input voltage tolerance shall be $\pm 10\%$ of nominal line voltage.
- b) **Displacement Power Factor**

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Six-pulse VSD shall be capable of maintaining a minimum true power factor (Displacement P.F. X Distortion P.F.) of 0.95 or better at rated load and nominal line voltage, over the entire speed range.

c) Efficiency

- A minimum of 96.5% (+/- 1%) at 100% speed and 100% motor load at nominal line voltage.
 - Control power supplies, control circuits, and cooling fans shall be included in all loss calculations.
- d) Operating ambient temperature range without derating: 0 °C to 40 °C (32 °F to 104 °F)
- e) Operating relative humidity range shall be 5% to 95% non-condensing.
- f) Operating elevation shall be up to 1000 Meters (3,300 ft) without derating.

Sizing

- a) Systems rated at Normal Duty loads shall provide 110% overload capability for up to one minute and 150% for up to 3 seconds.
- b) Systems rated at Heavy Duty loads shall provide 150% overload capability for up to one minute and 180% for up to 3 seconds.
- c) Systems rated at Light Duty loads (Frames 8 to 10) shall provide 110% overload capability for up to one minute with no 3 second overload.

Auto Reset/Run

- a) For faults other than those caused by a loss of power or any other non-critical fault, the drive system shall provide a means to automatically clear the fault and resume operation.

Ride-Through

- a) The VSD system shall attempt to ride through power dips up to 20% of nominal. The duration of ride-through shall be inversely proportional to load. For outages greater than 20%, the drive shall stop the motor and issue a power loss alarm signal to a process controller, which may be forwarded to an external alarm signalling device.

Run on Power Up

- a) The VSD system shall provide circuitry to allow for remote restart of equipment after a power outage. Unless indicated in the contact drawings, faults due to power outages shall be

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

remotely resettable. The VSD system shall indicate a loss of power to a process controller, which may be forwarded to an external alarm signalling device. Upon indication of power restoration the process controller will attempt to clear any faults and issue a run command, if desired.

Communications

- a) VSD shall provide an embedded EtherNet capabilities
- b) VSD shall be capable of communicating on multiple networks.
- c) VSD shall be capable of supporting the following network options:
 - EtherNet/IP
 - Modbus/TCP
 - Modbus RTU
 - Profibus DP

PS4.2.10.2.4 Installation

The low voltage VFD-starters shall form part of the MCC which shall be installed inside the pump station.

PS4.2.10.2.5 Measurement and Payment

The price for the supply and installation of the low voltage VFD-starters shall include for all of the following which have not been separately measured in the Bills of Quantities:

- Programming software for the motor protection relays, and a data cable for connecting a relay to a laptop PC.
- Factory tests.

PS4.2.11 FIELD CONTROL STATIONS

Field control stations which are equipped as specified below shall be provided for the following equipment at the pump station:

LV pump motors : emergency stop pushbuttons

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The field control stations shall be constructed in accordance with the typical general arrangement, Drawing and shall be installed in an easily-accessible position alongside the associated equipment.

PS4.2.12 LOW VOLTAGE POWER CABLES

PS4.2.12.1 General

LV cables shall be provided in accordance with the single-line diagram.

The cables shall be supplied and installed in accordance with Standard Specification E231 as varied by this Project Specification.

Should the ratings of LV motors differ from the Engineer's estimates (on which the single-line diagrams are based), then the motor supply cables shall be sized to suit the actual motor ratings. The voltage drop from the MCC to the motor terminals shall not exceed 2% of the motor rated voltage at motor rated current.

PS4.2.12.2 LV Cables

LV cables shall be provided as follows:

- From the LV distribution boards to LV loads as indicated on the single-line diagrams.
- The lighting and small power installations in the deferent Pump Stations pump halls shall be watertight industrial type surface mounted installations. All fittings and appliances shall be surface mounted, and shall be fed with cables installed on galvanized cable ladders, or in galvanized conduits, fixed on the surface of structures, complete with brass bushes on the ends.

All multicore LV power cables shall be 600 / 1000V PVC/PVCSWAPVC cables with stranded copper conductors.

All ECC cable connections shall be water tight to IP66.

PS4.2.12.3 Installation

LV power cables shall be installed on wall mounted cable ladder in cable trenches inside buildings and on vertical / horizontal structure-mounted cable ladder to equipment.

Excavations and the laying of cables, either directly in the ground or in ducts, shall be in accordance with Clause 3 of Standard Specification E231.

All cable routes indicated on the Engineer's drawings are provisional and the final routes shall be confirmed with the Engineer on site before cables are installed.

PS4.2.12.4 Measurement and Payment

- Prices for cable trench excavations and the laying of cables shall be determined in accordance with Clause 3 of Standard Specification E231.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Prices for the installation of cables in the ground shall include for cable marking tape.
- Prices for the installation of cables on cable ladder / tray shall include for fixing clamps or cable ties.
- Prices for the termination of cables shall include for all material required for the termination.
- Cable lengths given in the Bill of Quantities are provisional and subject to re-measurement on site. Unit prices shall allow for wastage, as only the net length will be measured for payment purposes.

PS4.2.13 CABLE SUPPORTS

Cable supports (ladder / tray) shall be provided in accordance with Standard Specification E220 and the cable routes and supports layout drawings.

Pricing shall include for the supply and installation of all materials and accessories to provide the complete support installation.

PS4.2.14 LOW VOLTAGE DISTRIBUTION BOARDS

PS4.2.14.1 General

Low voltage (LV) distribution boards shall be installed in the location agreed with the Engineer on site.

PS4.2.14.2 Equipment

All DBs shall be manufactured from 2mm 3CR12 steel and powder coated to National colour standard SANS 1091:2004, equipped with doors and shall be watertight with a rating of IP65.

'Normal' sections shall be Electric orange

'Standby' sections shall be Signal red

All LV switchgear and control gear shall be suitable for the system fault level indicated on the drawings.

The busbars shall be positioned in such a way to allow for easy extension to the sides by adding additional panels, and to allow for cable entry from the bottom. Their spacing shall be such that the cables can be connected to them in a neat and safe configuration. The busbars shall be rated for the full load capacity of the main switch and shall be capable of withstanding the fault level as indicated on the drawings for 3 seconds.

The ammeters shall be of the maximum demand indicating type.

It shall be possible to lock any motor feeder MCCB in the open position.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

The motor feeder circuit breakers shall be of the 'slow curve' type for motor applications with ratings as specified on the drawings.

Surge arrestors shall be complete with failure indication facility. These units shall be installed on all phases plus neutral and shall be as accessible as circuit breakers. Surge arrestors shall be solidly earthed by means of 16 mm² insulated earth wire.

Detachable gland plates suitable for receiving the cable shall be provided at the bottom side of Distribution board with glands.

PS4.2.14.3 Type tests:

The Contractor shall obtain the Engineer's approval of type test reports for MCCBs and other components used in all distribution boards before commencement of supply.

PS4.2.14.4 Drawings:

The Contractor shall supply all materials and components to provide complete DBs. The Contractor shall submit the detailed drawings along with component details/makes etc. for necessary approval.

PS4.2.14.5 Inspection;

All tests and inspection shall be made at the place of manufacturer. The manufacturer shall provide reasonable testing and inspection facilities and co-operation without any charge to satisfy him that the material is being supplied is in accordance with this specification. The proto of distribution boards shall be inspected by employer or his representative for approval before commencement of supply.

PS4.2.14.6 Installation

Wall mounted distribution boards shall not be mounted with the top of the board not higher than 2100 from finished floor level and with the bottom of the board not lower than 900 from finished floor level.

All boards shall be positioned at a distance no less than the depth of the board from any opening or doorway

All distribution boards shall be mounted on P1000 uni-strut against the walls.

All cable entries into distribution boards shall be from the bottom.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4.2.15 EARTHING AND LIGHTNING PROTECTION

PS4.2.15.1 General

The Earthing system which shall be provided at all the Pump stations shall comprise the following:

- An earth electrode and associated main earth bar.
- Earthing conductors
- Earth continuity conductors
- Bonding

PS4.2.15.2 Earth Electrode and Main Earth Bar

At the indicated main Earthing bar position, a tinned copper bar, as per the illustration on Earthing drawings, shall be installed horizontally against the cable trench wall. The copper bar shall be mounted on moulded epoxy insulators to space the bar 30 mm from the wall. Each insulator shall be provided with two, moulded-in 12 mm brass studs. The stud at the base of each insulator shall be screwed into an internally threaded wall anchor (at least 50 mm long) and the copper bar shall be secured to the remaining stud on each insulator with a brass nut, brass washer and cadmium plated spring washer. The copper bar shall be provided with at least fourteen 13 mm diameter holes at 35 mm centers. The two outer holes shall be employed for mounting the bar whilst the remaining holes shall each be fitted with 12 mm diameter bolts, nuts, washers and spring washers.

The two ends of the existing foundation earth conductor shall be fitted with lugs and bolted to the tinned Earthing bar.

All earthing conductors shall be continuous lengths without joints between terminations. Any damage to earthing conductors shall be reported in writing to the Engineer and, subject to his approval, shall be repaired by means of exothermic welding. Once the earth system has been installed, its resistance shall be measured and the results shall be submitted in a report to the Engineer. The Engineer will instruct the Contractor if further electrode enhancement is required.

PS4.2.15.3 Earthing Conductors

Earthing conductors shall be installed from the main earth bar to equipment earth bars / terminals in accordance with the illustration of the main earth bar arrangement as shown on the earthing drawings.

Earthing conductors shall be PVC-insulated copper conductors or bare copper earth conductor as indicated and sized in accordance with the earthing diagram and single line diagram drawings.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4.2.15.4 Earth Continuity Conductors

Earth continuity conductors shall be installed with all LV power cables in accordance with Standard Specifications E216 and as shown on the single line diagrams.

PS4.2.15.5 Bonding

All accessible extraneous part of electrical equipment / electrically-driven equipment shall be bonded in accordance with SANS 10142-1. The roof of the pump station and its steel support trusses shall be bonded to the steel support columns, and the columns shall be bonded to the foundation earth electrode all around the perimeter of the building.

PS4.2.16 INTERIOR AND EXTERIOR LIGHTING

PS4.2.16.1 General

The lighting installation in the pump station's pump hall shall be a watertight industrial type surface mounted installation. All fittings and appliances shall be surface mounted, and fed with cables installed as follows:

All cabling for the lighting installation shall be installed in galvanized conduits, fixed to the surface of structures, complete with suitable bushes on the ends.

All cables exposed by the removal of the protective sheath, which connect into light fittings, plugs, switches etc. shall be strictly in accordance with the SANS 10142 colour coding:

- All neutral cables shall be black. Where blue cables have been supplied, these shall be covered by a black shrink wrap sheath, etc.
- All live cables shall be red.
- All earth cables shall either have a green and yellow sleeve, or the sleeve shall be stripped off to leave bare copper.

The lighting installation in the pump stations shall be an industrial type surface mounted installation. All light switches shall be installed in surface mounted extension boxes.

All lamps and control gear shall be rated for the supply voltage of 230 V as specified.

PS4.2.16.2 Equipment

The lighting installation shall be a replacement of the existing lighting installation and shall be discussed and agreed with the Engineer on site. Fittings offered by the Contractor shall be as indicated on the drawings or approved equivalent.

Light fittings shall be supplied and installed complete with lamps, electronic control gear, diffusers, mounting facilities, etc., as applicable. All fittings shall be new and unused and shall be delivered to

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

site as packed by the supplier. Fixing of luminaires shall not compromise the protection rating of the luminaire. All bulkhead fittings shall be provided complete with special mounting brackets.

PS4.2.16.3 Installation

All light fittings in the pump station shall be connected to a dedicated Pratley type junction box. Disconnection of a light fitting shall not affect the operation of other light fittings on the same circuit. The cable between the junction boxes shall be heat resistant silicon insulated cable.

The Taking-Over Certificate for the installation will not be issued unless all light fittings and lamps are in working order.

The operating circuits of discharge type fittings shall be provided with suitable power factor compensation, ensuring a power factor better than 0.9.

The installation shall be reticulated along the cable ladders in positions agreed with the Engineer on site.

The Contractor shall ensure that the integrity of the luminaires, switches and draw boxes shall remain as required (IPX6 etc.) at all times. All bulkhead type fittings shall be equipped with special mounting brackets.

All access holes shall be sealed off with compression glands and other suitable covers to ensure a weather proof installation, as required.

All lighting switches in the watertight industrial installation area shall be weather proof, IPX6 rated, ultra violet (U.V.) protected, non-corrosive types mounted on the surface, suitable for 16 Amp 230 Volt 50 Hz and shall be rotary-cam operated.

PS4.2.16.4 Measurement and Payment

- Prices for the supply of light fittings shall be complete with lamps
- Prices for the supply of class1 division1 light fittings shall be complete with appropriate compression gland.

PS4.2.17 POWER OUTLETS

PS4.2.17.1 General

The small power installation in the pump station's pump area shall be a watertight industrial surface mounted installation. All fittings and appliances shall be surface mounted. All cabling for power outlet installation shall be installed on galvanized cable ladders, or in galvanized conduits, fixed on the surface of structures, complete with brass bushes on the ends.

All power outlets shall be installed in surface mounted extension boxes.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.17.2 Equipment

The small power installation shall be a replacement of the existing power installation and shall be discussed and agreed with the Engineer on site. Appliances offered by the Contractor shall be as listed in the BOQ or approved equivalent.

In the watertight industrial installation:

- The Contractor shall allow for Industrial type weather proof 3 Pin switched socket outlets. The switched socket outlets shall be non-corrosive, IPX6, rated at 15 Amp 230 Volt 50 Hz, shall have rotary-cam operated switching mechanism and shall be installed on the surface. The switched socket outlet shall be complete with male plug. The configuration shall be the same as the normal 3 pin domestic plugs used South Africa and the unit shall accommodate the watertight as well as the normal sockets.
- The Contractor shall allow for Industrial type weather proof 3 phase 32 Amp 400 Volt 50. Hz, 4 – pole, 5-pin switched socket outlets, rated IPX6. The switched socket outlet shall be complete with male plug. The circuit wiring shall be as indicated on the single line diagrams.

Samples shall be submitted to the engineer for approval.

PS4.2.17.3 Measurement and Payment

Prices for the supply of industrial 3-pin and 5-pin socket outlets shall be for units complete with male plugs.

PS4.2.18 LOW VOLTAGE MOTORS

Low voltage motors for the mechanical equipment shall form part of the electrical equipment and shall comply with Standard Specification E241:

LV motors shall be priced as part of the associated mechanical equipment.

PS4.2.19 CONNECTIONS TO MECHANICAL EQUIPMENT

Where the single-line diagrams indicate a local disconnecter at the load-end of feeders to mechanical equipment such as a crane and ventilation fans, the feeder cable shall be terminated at a wall-mounted disconnecter alongside the mechanical equipment, and the final connection from the disconnecter to the equipment shall be made by the installer of the mechanical equipment.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.20 ENGINE DRIVEN ELECTRICITY GENERATING SET

PS4.2.20.1 Technical Standards

The following technical standards shall apply to this scope of work and all work and materials/equipment/services shall comply with every aspect of each of these standards where applicable:

LOCAL AND INTERNATIONAL STANDARDS		
N O	SPEC NO.	TITLE
	BS EN 55014- 1:1997	Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus. Emission. Product family standard
	SANS 10142	The wiring of premises
	SANS 342	Automotive diesel fuel
	SANS 60947	Low-voltage switchgear and control gear
	SANS 60439-1	Low-voltage switchgear and control gear ASSEMBLIES Part 1: Type-tested and partially type-tested ASSEMBLIES
	SANS 60186	Voltage transformers
	SANS 60044-1	Instrument Transformers Part 1 : Current transformers
	SANS 10292	Earthing of low-voltage (LV) distribution systems
	SANS 156	Moulded-case breakers
	SANS 1574	Electric cables - Flexible cords and flexible cables
	SANS 8528	Reciprocating internal combustion engine driven alternating current generating sets: Parts 1-7, 9,10,12

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

LOCAL AND INTERNATIONAL STANDARDS		
N O	SPEC NO.	TITLE
	SANS 1632	Batteries
	SANS 1652	Battery chargers - Industrial type
	SANS 60529	Degrees of protection provided by enclosures (IP Code)
	SANS 1091	National colour standard

PS4.2.20.2 Referenced Documentation

All of the documents specified under this section shall form part of this specification and must be complied with. Should any ambiguity arise between these documents and this specification, tenderers are obliged to bring such ambiguities to the attention of the Engineer.

PS4.2.20.3 General

This specification specifies the standby power requirements for all the pump stations. All three sites to be equipped with sound attenuated outdoor canopy sets as follows.

The standby power system for Kibler Park pump station comprises a stationary diesel alternator set to provide standby power for the purpose of running:

2 x 132 kW electric motor driven pump set – Method of starting: VFD Starter and 6 kW Lighting and General Load.

Should the ratings of LV motors differ from the Engineer's estimates (on which the size of the diesel alternator set is based), then the diesel alternator set shall be sized to suit the actual motor ratings.

No redundancy is required on the standby supply and hence a single diesel alternator set shall be provided.

The standby power generator shall be located inside a containerized sound attenuated canopy adjacent to the pump station buildings. The exact position to be determined on site and to be agreed with the Engineer.

Site conditions:

- Ambient temperature: 0-50°C. Relative humidity: 95% non-condensive
- Altitude: 1700 m above sea level

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Environment: Regular

PS4.2.20.4 Scope of Work

This section defines the equipment, work and material forming part of the standby power generating plant.

The standby power supply shall consist of a diesel engine driven LV alternating current generating set as well as all the necessary control and power systems and fuel storage.

For the detail specification of the diesel alternator set refers to the returnable schedules. Tenderers shall provide all the information requested in Volume 1 Section T2.2 Schedule E Part 5. Failure to do so may render a tender invalid.

All tenderers shall state in writing in their tenders that they comply with every aspect of the specification except for the non-compliances which they should list. Failure to do so may render the tender invalid. The onus rests on the Tenderer to submit a request for clarification if uncertainty regarding the scope or specification exists.

PS4.2.20.5 Included in the scope of supply

Contractors are to note that any omission from the scope as defined below shall not relieve them from the legal obligation to provide a fully functional system, complete in all respects, ready to operate and with the standard guarantees and warranties as contractually agreed in order to fulfill the requirements of this specification as well as good engineering practice and workmanship. The responsibility lies with the contractor to allow for all work, equipment and materials in order to comply and to clarify any uncertainties with the Engineer in writing.

This specification calls for the supply, manufacturing, testing, delivery, installation and commissioning of the following as set out in Volume 1 Section PS4.2.18.

A1 Diesel engine complete with all systems, accessories, protection, metering, monitoring, control, labeling etc. as described in detail under Item 2.

A2 Alternator complete with all systems, accessories, protection, metering, monitoring, control, labeling etc. as specified under Item 3.

A3 Mechanical structure complete including base frame, coupling, vibration dampening, etc. as specified under Item 4

A4 Fuel system complete including day tank, fuel supply lines, top-up supply line with pump and connector, valves, filters, protection, metering, monitoring, control, labeling, accessories, etc. as specified under Item 5

A5 Exhaust system complete including, pipes/ducting, silencer, expansion bellows, lagging, accessories, metering, monitoring, control, labeling etc. as specified under Item 6.

A6 Switchgear and electrical complete with all systems, accessories, protection, metering, monitoring, control, labeling etc. as under Item 7.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

A7 Control complete with all systems, accessories, protection, metering, monitoring, control, labeling etc. as specified under Item 8.

A8 Batteries and battery charger complete with all systems, accessories, protection, metering, monitoring, control, labeling etc. as specified under Item 9.

A9 Earthing system including cables, pre-drilled tinned copper earth bar, earth bar mountings, accessories, labeling etc. as specified under Item 10.

A10 Terminals, wiring and cabling as specified under Item 11 which includes all low voltage power and control cables from the field to the diesel alternator's control panel/s.

A11 Corrosion protection as specified under Item 12.

A13 Spares and special tools as specified under Item 14.

A14 All type tests certificates, factory acceptance tests, cold and hot commissioning, operational tests, site test, etc. as specified under Item 15.

A15 All marking, labeling and documentation etc. as specified under Item 16.

A16 All setting up and adjustment of protection, control and operational parameters including software programming of equipment. Protection and other relevant settings shall be in conjunction with the Protection Specialist appointed for the main distribution network.

A17 All relevant signals for monitoring and control required by the plant main process control system shall be commissioned right through from the field equipment to the plant process control system.

A18 All relevant signals for control and interlocking required by the main electrical distribution protection scheme shall be commissioned right through from the field equipment to the relevant switchgear panel terminals.

PS4.2.20.6 Excluded from the scope of supply

The following items shall be excluded from the scope of supply of this part of the contract and are included elsewhere:

B1 Any civil works including buildings, foundations, plinths, structures, concrete trenches, earthworks, etc. The contractor shall provide all the necessary drawings and information to enable the civil contractor to provide for all the civil and building related requirements of the emergency power supply system.

B2 All external network cabling/fibre from the communications network interface of the standby generator control system to the main plant control system. The interface shall be the cable/fibre connection point on the communications card inside the diesel alternator PLC or control panel.

B3 Grading of the network protection settings.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

B4 Developing and coding of any plant control and SCADA software. The software interface shall be the communications network protocol which will be developed in conjunction with the plant control specialist.

B7 Any control and protection equipment required for the standby alternator LV circuit breaker on the pump station Main LV and generator control panel. Any programming or setting of any equipment on the pump station Main LV and generator control panel will be performed by the plant protection specialist and support shall be provided to him by the contractor's specialist/s.

B8 Lightning protection system for diesel alternator plant shall be excluded from the scope of supply.

PS4.2.20.7 Equipment

A. Diesel Engine/Alternator Set

The standby generator will only be required during mains power failure conditions. The Contractor shall perform all the necessary calculations/modeling in order to size the generator set for the application. The onus rest on the Contractor to ensure that the standby generator unit selected shall be adequate to ensure that it would be able to start the individual motor loads as specified. Should the unit chosen by the Contractor fail in any aspect it shall be replaced by an adequate unit at the Contractor's own cost. A single generator set shall be offered, as multiple sets operating in parallel will not be considered.

The standby generator set shall be provided with dummy loads and with the associated control gear. The dummy loads must switch in automatically when the generator is tested in the test mode, or either run in the automatic mode when the load on the generator is less than 35% of the standby generator set's rated capacity. The dummy load must not be less than 35% of the engine total output power.

The proposed size of the alternator specified in the detail data schedules is indicative only of the order of magnitude of the unit expected. The Contractor shall under no circumstances be relieved from his responsibility to provide an adequately sized unit due to this specification.

Regarding the alternator protection, the Contractor shall specify in detail all the components required for the complete installation even if they are not included in the scope of supply. This information shall be made available to the designers/manufacturers of the pump station Main LV and generator control panel. The Contractor shall ensure that proper coordination takes place between the generator supplier and the switchboard manufacturer to ensure that the integrated system will function correctly as specified.

PS4.2.20.8 Mechanical Build

A duplex frame with sound attenuated containerized canopy has been specified for the diesel engine/alternator unit. The Contractor shall clearly state with motivation if he wishes to propose a different arrangement. However, the diesel engine/alternator unit shall be mounted in such a way that the complete unit can be lifted by crane.

All components of the diesel engine/alternator set system shall be mounted on the base frame. The connections to this system shall be designed in such a way that they can easily be disconnected

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

without risk of damage when the complete diesel engine/alternator unit or the individual diesel engine or alternator units need to be removed.

Vibration dampening mountings shall be adequate to comply with the maximum allowed vibration levels specified in the applicable standards.

Sound attenuation of the engine/alternator unit shall comply with the levels specified in Volume 1 Section T2.2 Schedule E Part 5 item 6.1d Maximum outlet noise level. The maximum sound levels specified under this section shall apply anywhere directly outside the generator room. This implies that all components included in the scope of the diesel/alternator supplier shall comply with this requirement. This shall include for any material required for soundproofing of the generator enclosure.

PS4.2.20.9 Fuel System

The day tank shall be part of the base frame. The size of the tank as specified in the schedules is the preferred size pending any legal restrictions in volume of flammable substances allowed. Tenderers shall provide a general layout drawing of the tank installation, routing of fuel lines, breather pipe and refueling line. Any building work or concrete foundation work shall be excluded from the scope.

The material for fuel tanks has been specified as hot dipped galvanised mild steel. The tanks shall be provided with a protective inner lining as specified. Tenderers shall tender according to the specification but may offer alternatives separately priced.

PS4.2.20.10 Exhaust system

Tenderers are to include for any ducting required to ensure adequate cooling of the engine. Where ducting is required this shall be indicated on the general layout drawing provided by tenderers.

PS4.2.20.11 Control System

This section relates to signals and SCADA requirements with respect to control, monitoring, alarm and trip annunciation. All signals from the standby power plant shall be provided to the communications network. Where a proprietary protocol is provided other than the plant standard protocol selected, a suitable, field tested interface shall be provided for conversion of the protocol.

The interface between the plant control system and the diesel alternator system shall be the diesel alternator set control panel terminal strip, where signals for external control purposes shall be provided in the format dictated by the control systems interface (to be provided after order placement). All external hardware and software shall be excluded from the scope of supply. However, the tenderer shall allow for specialist resource to develop the system in conjunction with the main distribution network specialist and the main plant control system specialist

PS4.2.20.12 Interlocking Requirements with Distribution Network

The diesel alternator control and protection system shall make available all the signals and parameters to be measured as specified in this document and in Volume 1 Section T2.2 Schedule E

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Part 5. The Contractor shall ensure that all the necessary interface equipment shall be provided for this purpose, and the individual components shall be specified to fulfill the requirements of the external control and protection systems. The type, rating and number of contacts required will be specified at a later stage after the main plant protection and control systems interfaces have been specified. All metering, monitoring and alarm input signals shall be provided via the plant communications network interface; however some signals may have to be duplicated in hardwired format where applicable. The same applies to control output signals.

All potential-free auxiliary contacts required for remote tripping/interlocking/indication of the Alternator 400 V circuit breaker inside the pump station Main LV and generator control panel shall be provided. Potential-free auxiliary contacts required for any other remote hardwired tripping, alarm or indication purposes shall be specified and provided. The number of contacts shall be finalized during detail design.

Auto transfer upon mains restoration will be controlled by the pump station PLC which will be provided and programmed under the control and instrumentation portion of the contract.

PS4.2.20.13 Proposed Regular Testing of Emergency Supply

Regular testing of the emergency supply as prescribed by the manufacturer will be performed at rated load by using the essential equipment as main load. The test sequencing and control shall be provided for in the main plant control system and falls outside the scope of this section. Each tenderer shall specify both the no-load and full-load recommended testing intervals and duration for the diesel alternator set.

PS4.2.20.14 Logistic Support

In terms of logistic support the Tenderer shall provide typical lead times for replacement of the complete unit or alternator or engine or other components; typical lead times to repair the engine, alternator and other components, as well as lead times for spare parts for the engine, alternator and other components. The Tenderer shall indicate for what period of time spare parts will be available for the engine, alternator and other components. The Tenderer shall indicate which repairs can be performed on site and which will require repair at the supplier's workshops; and also provide lead times for collection and delivery of the engine, alternator and other components. The Tenderer shall indicate what the guarantees and warranties are on all repairs. The Tenderer shall indicate what the lead time is for technical support on any aspect of the system, and shall also indicate the availability of qualified personnel to assist with problems either remotely or physically on site.

PS4.2.20.15 Manufacture and Installation

Detail layout and general arrangement drawings shall be provided by the Contractor prior to commencement of manufacture of any component and within one month after contract award. All special civil requirements for installation purposes shall be specified in the tender.

No equipment shall be shipped prior to final factory acceptance testing and issue of factory test certificates. As witnessing of these tests by the client's quality control representative/s is compulsory, the contractor shall only commence with shipping after obtaining the proper signed off acceptance

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

certificate. The contractor shall provide a documented quality control trail throughout the manufacturing process all the way through installation, commissioning and operational testing.

Cold commissioning shall be performed prior to energizing of any part mechanically or electrically. Upon completion of hot commissioning, a commissioning test report shall be provided together with a complete set of marked-up as built drawings and documentation.

PS4.2.20.16 Payment and Measurement

Due to the packaged nature of this part of the plant the Contractor shall provide for all materials, components, parts, labour, etc. to completely fulfill the requirements of this specification, the applicable standards and the data schedules. Allowance shall be made for specialist labour to fully integrate the plant into the system. The Tenderer is reminded of the remoteness of the installation site, in order to properly cost for site establishment.

PS4.2.21 Cable construction

The cable shall be constructed as follows:

Conductor Material

The copper conductors shall be of plain annealed or hard draw wire in accordance with the requirements of the latest edition of SANS 1411.

Insulation

The insulation material shall comprise of PVC in accordance with the requirements of the latest edition of SANS 1411.

Core Colour Identification

The cable cores colour shall be in accordance with the requirements of the latest edition of SANS 1507

Bedding

The bedding shall consist of a continuous P.V.C. extruded sheath.

Armour

The armouring shall consist of one layer of round galvanised steel wire in accordance with the requirements of the latest edition of SANS 1411.

Sheath

The outer sheathing shall be an impermeable, halogen free, reduced smoke emission, flame retardant PVC in accordance with the latest edition of SANS 1411.

Cable for Industrial Control Circuit Wiring

For general purposes this shall be a flexible P.V.C. insulated cable with a minimum of 21 finely

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

stranded copper conductors having minimum cross sectional area of 2.5mm² and a rated insulation voltage of 600/1000V, manufactured to SANS 1507 or equivalent specifications.

PS4.2.21.1 Cable Markings

The cables shall be legibly marked in accordance with the requirements of the latest edition of SANS 1507, and shall also include the following:

- (a) Conductor size in square millimetres
- (b) Number of cores
- (c) Conductor material (copper)
- (d) The specification number (SANS 1507) to which the cable has been manufactured.
- (e) The year of manufacture.

PS4.2.21.2 Cable Sizing and De-Rating

The cables shall be sized and de-rated in accordance with the requirements of the latest edition of SANS 10142.

PS4.2.21.3 Packaging

Cables shall be packed on reeled drums. The moisture content of wooden cable drums shall not exceed 20%.

Each end of the cable shall before being secured to the reeled drum, be sealed by an acceptable method approved by the Engineer. The outer end shall be secured to the reel drum and the inner end shall be protected in a manner against mechanical damage.

The cable reeled drums shall be capable of taking a round spindle and be lagged with strong, closely fitted battens, at the inner and outer circumference so as to prevent damage to the cables. The spindle bearing plates shall be steel. The dimensions of the drum shall not exceed 1 100 mm width, 2 000 mm diameter and the spindle bearing plate shall not be less than 9 mm thick. Each drum shall be clearly marked on both sides in accordance with the latest edition of SANS 1507.

The ends of the PVC sheathed cable shall be sealed to avoid penetration of moisture. Each cable drum shall be numbered.

PS4.2.21.4 Testing Of Cables

The cables shall be tested in accordance with the requirements of the latest edition of SANS 1507. Routine test certificates shall be supplied for each drum of cable supplied under the Contract.

PS4.2.21.5 Quality Assurance

All the cables supplied under the Scope of Works of this project shall be designed and manufactured under a quality control system, typically to SANS ISO 9000 series.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.2.21.6 Minimum health and safety requirements

This section of the specifications is to be read in conjunction with the Contract Health and Safety specifications, included as Volume 2. The following requirements shall be deemed minimum compliance requirements to ensure the health and safety of the public and workers during the execution of the Contract:

PS4.2.21.7 Works site safety

The works are to be executed in areas with high volume pedestrian and vehicular traffic. The Contractor shall ensure that:

- the workspace required to successfully complete installations shall be kept at a minimum. Thus, plant and equipment not used is to be removed from the work site to minimize disruption to the customer, other traffic and the general public.
- the working area shall be free of debris when the Contractor leaves the site at the end of the day or each shift.
- open chambers, machinery and standing equipment are to be protected to ensure the safety and convenience of traffic, the general public or other at all times.

PS4.2.21.8 Metric measurement

All survey recorded dimensions of infrastructure shall be in metric units, including for conduits, chambers.

PS4.2.21.9 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 52 weeks 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.

PS4.2.21.10 Spoiling of material

No indiscriminate spoiling of material by the Contractor shall be allowed. All surplus or unsuitable material shall be spoiled at a site located by the Contractor, deemed by the Engineer as compliant with legislative requirements. shall be poured on granular material or acceptable undisturbed foundation material.

PS4.3 Work-related instructions

PS4.3.1 Return of removed cables and fittings and old MCC fittings

On completion of the ordered Works, the Contractor shall return all removed supply cable and/or fittings, old MCC panels and fittings to the Employer's Glenvista depot

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4.3.2 Damage to persons and property

The Contractor shall (except if and so far as the Contract provides otherwise) indemnify and defend at his own expense the Employer, its officers, agents, employees and servants from and against all suits, claims, demands, proceedings, and liability of any nature or kind, including costs and expenses, for injuries or damages to any person or any property whatsoever which may arise out of or in consequence of acts or omissions of the Contractor or his agents, employees, servants or sub-contractors in the execution of the Contract. The provision of this clause shall extend to suits, claims, demands, proceedings and liability in the nature of workmen's compensation claims and arising out of the use of patented inventions and devices. Provided always that nothing herein contained shall be deemed to render the Contractor liable for or in respect of or with respect to:

- The right of the Employer to construct the Works or any part thereof on or through any land.
- Interference whether temporary or permanent with any right of water or other easement which is the unavoidable result of the construction of the Works in accordance with the Contract.
- Death, injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, done or committed during the validity of the Contract.

PS4.3.3 Interference with property access and traffic

All operations necessary for the execution of the Works and for the Construction of any Temporary Works shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the public convenience, or the access to, use and occupation of, public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person. The Contractor shall hold harmless and indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any such matters in so far as the Contractor is responsible therefore.

PS4.3.4 Contractor to keep site clean

During the progress of the Works, the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Constructional Plant and surplus materials and clear away and remove from the Site any rubbish or Temporary Works no longer required.

PS4.3.5 Clearance of site on practical completion

On the practical completion of the Works, the Contractor shall clear away and remove from the Site all Constructional Plant surplus materials, rubbish and Temporary Works of every kind and leave the whole of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer or his duly authorized representative.

PS4.3.6 Testing

Testing of the various parts of the works shall be in accordance to the relevant standard specifications, or as required by the material manufacturer.

PS4.3.7 Contractor's responsibility

The Contractor shall be held responsible for damage to street or road surfaces, kerbing, storm water drainage channels (gutters), existing utilities, etc. that result from his negligence during the implementation of all works. The Contractor shall repair, at his cost, any damage resulting there from, which shall be subject to approval by the owner of such asset and the Engineer or his duly authorized representative.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.3.8 No disturbance

The Contractor shall be required to perform Works at all surface boxes and chambers with limited and approved disturbance to the existing service provision.

PS4.3.9 Records and reporting

PS4.3.10 Job cards

The Contractor shall accurately maintain and complete a job card management sheet in soft and hard copy format for all ordered Works per site. The execution and management of job cards shall at a minimum allow for:

- a) **Starting:** Contractor shall receive job cards from the Employer. Upon receipt the Contractor shall:
 - capture all the relevant information on job card management sheet, as per Figure 4.2.
 - verify that all issued job cards have been received, and indicate such in the space provided.
 - sign and date receipt in the space provided.
- b) **Executing the Works:** The Contractor shall commence with executing the works. Where a job card is returned to the Employer with works incomplete and requiring further instruction by the Contractor, the Employer shall investigate, and where applicable re-issue the job card with updated details or issue a new job card to the Contractor who shall accordingly verify and sign receipt of the re-issued or new job cards. The Contractor shall proceed to execute the works as issued with the updated or new job card.
- c) **Completing the Job Card:** Upon completion of the ordered works, the job card together with a completed meter change-over sheet shall be returned to the Employer who shall verify and sign receipt of all returned job cards. The Contractor shall further indicate whether the issued works have been completed, and *if not* clearly state the reason(s).

A copy of the job card management sheet shall be submitted with the monthly report, in addition to maintaining a copy on record for the duration of the Contract Period, including and up to the end of the contractual defects and liability period. On request a copy shall be made available to the Engineer or his duly authorised representative within 24 hours of request therefore at no cost to the Employer or Engineer.

The soft copy version shall be prepared in Microsoft Excel 2007 or a compatible version or compatible software.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Item	Job Card Reference Number	Issued to Contractor		Returned to JW							Reissued to Contractor		Returned to JW												
		T-Code	Address	Received (Y/N)	Meter Serial Number	Complete (Y/N)	Meter not located	Reason if No	Stand not located	Work not required	Job Card (Y/N)	Change Over Sheet (Y/N)	Received (Y/N)	Revised T-Code	Revised Address	Received (Y/N)	Meter Serial Number	Complete (Y/N)	Meter not located	Reason if No	Stand not located	Work not required	Job Card (Y/N)	Change Over Sheet (Y/N)	Received (Y/N)
1	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____
2	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____
3	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____
4	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____
5	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____
6	Note Contractor and Employer Representatives are to sign receipt of job cards.	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____	Received By	Name _____ D D / M M / 20 Y Y	Sign _____

Figure 4.2: Job Card Management Sheet

NOTE: The status of works for specific job cards in the job card management sheet shall be captured in a horizontal manner, i.e. the sequence of events (issuing of job cards to

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

Contractor, returning to Employer etc.) shall be entered and captured in the sheet from left to right. The job card reference number shall be entered only once in the sheet and no duplicates shall be allowed. Failure to return any job card or meter change over sheet, shall forfeit payment due to the Contractor for the executed works related to that job card.

PS4.3.11 Photographs

A copy of the photographs for all completed ordered works shall be submitted with the weekly progress report, whilst maintaining another copy on record for the duration of the Contract Period, including and up to the end of the contractual defects and liability period. Further a copy of the photograph shall be made available to the Engineer or his duly authorised representative within 24 hours of request therefore at no cost to the Employer or Engineer.

PS4.3.11.1 Critical required photographs

Photographs shall be provided for:

- Excavations and trenches, clearly showing the extents of the excavations before **and after** the commencement of any works.
- Cable, clearly showing the cable to be replaced, **before and after** removal and of the new cable **after** the replacement has been completed.

PS4.3.11.2 Format and Quality

Photographs shall be supplied in digital format having a minimum resolution of 5 Mega Pixels each. The photos shall have sufficient exposure to present a clear image and accurate representation of the photograph matter.

PS4.3.11.3 Naming of photographs

Each photograph is to be named as follows:

Project Number - Job card Reference Number - Stage of Works – ‘Pic’ - Picture number of the sequence

E.g. JWOPS 046/21-2976830-Before-Pic-3.jpg

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.3.12 Reporting requirements

The Contractor shall submit to the Engineer reports as follows:

- Weekly on or before Friday of each Week;
- with his request for payment;
- within a maximum of 5 days after successful completion and testing of the completed ordered Works, containing a full record of the Works completed under the applicable job card;
- within a maximum of 5 days after the expiration date of the Contract Period for all successfully completed and tested ordered Works, containing a full record of the Works completed under the Contracts;
- two hard format copies of each report (unless specified otherwise), respectively for use by the Engineer and the Employer, each containing:
 - a detailed job card list (as detailed per the clause PS4.2.12.1 (Job cards)) for ordered Works per site;
 - copy of each job card of ordered Works per site; and
 - 1 properly labelled CD containing all the identical submitted report information (as stated above) in electronic format.

PS4.3.12.1 Contractual sign-off

The Contractor shall ensure that all reports submitted to the Engineer or his duly authorised representative are formally signed-off by the most senior Contractor designated manager, preferably the Contract authorised signatory, as an indication that the report has been quality checked and information contained therein is an accurate account of the works executed.

No report shall be accepted for review and shall be considered incomplete by the Engineer or his duly authorised representative if it is not formally signed by the most senior Contractor designated manager.

PS4.3.13 Locating of services

The Contractor shall locate all services, known and unknown, within the vicinity of the ordered Works, using specialist equipment and if required exposing such by means of hand excavation. This shall be limited to where ordered Works may result in damage of such services, typically as may be the case with the installation of a new meter and/or fitting or repositioning of an existing meter and/or fitting.

PS4.3.14 Access to disconnect and connect erf connections to secondary mains

The Contractor shall:

- Locate and expose the secondary mains by hand excavations to such an extent as to provide sufficient working space, to a minimum depth of 300mm below the secondary mains to facilitate proper connection of the erf connection.
- Protect secondary mains at all times whilst being located and erf connections disconnected or connected, backfilling, compaction and surface reinstatements are being executed.

PS4.4 Plant and materials

The Contractor is required to provide all plant and materials necessary to carry out the works as specified and required. No additional allowances other than those already specified in the Schedule of Rates shall be allowed for with respect to plant and materials.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS4.5 Construction equipment

See clause PS4.3.

PS4.6 Existing services

The Contractor:

- must make provision for the possible existence of numerous services (e.g.: Stormwater, Sewer, Eskom, City Power, Egoli Gas, Rand Water, Telkom, and the like) within and in close proximity to the work areas.
- is to obtain way leaves indicating the location of existing services from all affected service providers prior to the commencement of construction. The Contractor is to comply with the conditions of the way leaves received from the various service providers.
- is to ensure the protection and integrity of all existing services exposed and encountered through the course of construction activities. 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. The Contractor is to record on as built drawings the location of existing services or services which have been relocated during Contract Period.
- must inform the relevant service provider immediately (within 2 hours of incident) such that procedures for the reinstatement of the service can be effected, should he damage or break an existing service (whether known or unknown).
- is responsible to provide his own equipment in order to determine the location of existing services.

NOTA BENE: Drawings indicating other existing services in the vicinity of the Works are not guaranteed as being accurate, as all other services may not have been recorded or properly recorded. It shall remain the responsibility of the Contractor to perform preoperational work, to locate existing services in advance of the commencement of the Works.

PS4.7 Site establishment, facilities available and required

The works will be carried out at Kibler Park sewer pump station, site establishment, storage and safe guarding of the fittings, materials and equipment shall be the responsibility of the Contractor.

PS4.8 Site usage

Site usage shall be limited to hours as specified in the Contract Data.

PS4.9 Permits and wayleaves

The Contractor shall be required to obtain permits and wayleaves from all the applicable service providers within the jurisdiction of the CoJ, thus including the following services: roads and stormwater (JRA), bulk water supply (Rand Water), electricity (Eskom and City Power), gas (Egoli Gas), telecommunications (Telkom), and the like.

The Engineer shall assist the Contractor to obtain clearance from the various departments 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 JRA, this shall be as per the CoJ COP. Further, a processing fee per wayleave shall be payable to cover the cost of processing and approval of the JRA wayleave applications.

PS4.10 Alterations, additions, extensions and modifications to existing works

No further alterations will be added on the scope of work

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS4.11 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 which he causes to adjoining properties as well as any costs involved in refuting or processing such claims.

PS4.12 Water, sanitation and electricity for construction purposes

Site facilities are required under this Contract, thus the Contractor shall make his own arrangements for the provision of all water, sanitation and electricity for construction works for the duration of the contract period to successfully execute the works.

PAYMENT CLAUSE

PSA SANS 1200 A PRELIMINARY AND GENERAL

PSA 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

PSA 8.3 1 Contractual Requirements..... Unit: Sum

The sum shall cover the Contractor's initial costs of providing sureties, insurance of the Works and plant, third party or public liability insurance and unemployment insurance to cover his compliance with the requirements of the Workmen's Compensation Act, 1941 (Act NO. 30 of 1941) and any other initial financing obligations of a preliminary and general nature.

Add the following

The rate shall also cover the cost and implementation of Covid-19 in terms of legislation, regulations and protocols.

PSA 8.4 SCHEDULED TIME-RELATED ITEMS

PSA 8.4.1 Contractual requirements

Replace with the following

All time –related item costs are deemed to be included in the various rates per construction related items.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS5 MANAGEMENT OF THE WORKS

PS5.1 Applicable SANS 1921 Standards

SANS 1921-1:2004: Construction and management requirements for works contracts Part 1: General engineering and construction works shall be applicable to this Contract

PS5.2 Programming

The Contractor shall be required to provide a Contract Programme for the work to be carried out on the supplying, delivering, installing and installing the various mechanical and Electrical equipment required.

PS5.3 Sequence of the works

The Contractor shall address matters regarding the approval of his Health and Safety Plan, thereafter the works shall commence.

The sequence of works to be executed shall be agreed between the Engineer and the Contractor, however items of importance to note:

- Removal of the existing power supply cable, incomer cable and old MCC,
- Lead time required for new mechanical and electrical equipment.

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.

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

In addition to GCC (2015), Clause 7, the Contractor is required to monitor the quality of his product and methodology of construction. Within three weeks of the award of the contract the Contractor will furnish the Engineer with a Quality Assurance and Control Plan that incorporates all of the requirements of this specification.

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 Chapter 13 of the South African Road Traffic Signs Manual**.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

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 shall be made regarding maintenance of access.

PS5.7.3 Transport Department requirements

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 Engineer.

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 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.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS5.10 Recording of Weather and Abnormal Rainfall

Extension of time shall be granted on this project, should the execution of the scope of work be affected by weather and abnormal rainfall

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.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS5.12 Key personnel

PS5.12.1 General

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:

- Contract Manager;
- Quality Manager/Auditor/Controller;
- General works foreman;
- Electrician;
- Technician;
- Engineer;
- Health and Safety Officer/s.

PS5.13 Management meetings

Weekly progress 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.

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 Engineer 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 Engineer or his representative within 24 hours from being requested to do so.

PS5.16 Bonds and guarantees

Not Applicable

PS5.17 Payment certificates

Payment certificates shall be submitted to the Engineer, in the format required on a monthly basis.

PS5.18 Permits

Refer to PS 4.8

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PS6 FEATURES REQUIRING SPECIAL ATTENTION

PS6.1 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, his plant, equipment, materials, subcontractors or employees as a result of a security incident of any nature.
- b) which have been identified, by the Engineer, 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 representative at a convenient and safe location and thereafter escort to the necessary areas.

PS6.2 Work outside normal working hours

The Contractor is permitted to work outside of normal working hours only upon obtaining written permission from the Engineer.

PS6.3 Sanitary facilities

The Contractor is required to supply adequate sanitary facilities for employees.

PS6.4 Community liaison and community relations

For the purpose of this project a community liaison officer may not be required; however the Contractor shall be required to inform the community with regards to his activities in particular where such activities may affect the service provision to the affected community (See PS6.6).

PS6.5 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) The Contractor shall arrange a suitable time for execution of the works with the customers clearly noting:
 - i) a summary of work to be completed;
 - ii) the time and duration of service interruption; and
 - iii) 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 Employer or his duly authorized representatives on a monthly basis.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

PS6.6 Continuity of service supply to customers

The activities of the Contractor shall not unreasonably interfere with the service supply to customer 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 Employer.

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 the account. The Engineer 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.

PS6.7 Conditions and procedures for service agencies

The Contractor shall comply with the conditions and procedures of the various affected service agencies, as mandated in their associated wayleaves.

PS6.8 Generic labour intensive specifications

EPWP guidelines shall applicable to this Contract, although it is expected that the Contractor execute the majority portion of the works utilising labour, but skilled labour.

PS6.9 Acceptance of works and causes for rejection

PS6.9.1 Acceptance of implemented and associated works

The Engineer or his duly authorized representative shall only accept works complying with the Employer's requirements and/or specifications, including:

- Supplied Equipment approved by the Employer in conjunction with the Employer's current metering policy;
- sufficiently protecting against corrosion all fittings and joints; and

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



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 (2014), 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 and safeguarding of trenches;
- Working in confined spaces;
- Dust;
- Plant and machinery operation;
- Existing services;
- Offloading of material;
- Overhead power lines;
- Hand tools;
- Machine operator;
- Third party exposures;
- Use of portable electrical tools;
- Location of site camp;
- Storage and handling of material;
- Storage of hazardous materials;
- Fire prevention and protection;

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

- Fuel supply;
- Refuelling vehicles/plant;
- Welding;
- Waste;
- Work Temperature;
- Poor housekeeping;
- Electrical equipment portable appliances;
- Handling Heavy Objects
- Falling materials;
- Falling on employees
- Poor lifting technique
- Damage to adjacent services
- Removal of old panels and reinstallation of new panel
- Accidental contact
 - ☐ In-competent personnel doing the work
 - ☐ Improper methods done to do the work
 - ☐ No supervision
- Clean site and remove waste

Safe work and emergency procedures need to be prepared to address the 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 to repeat itself on a frequent basis.
- Step 3 Involve as many people as possible in the ongoing risk assessment process especially those at risk.
- Step 4 Gather all the information and analyse it.
- Step 5 Look at what actually could or has occurred including non-routine operations.
- Step 6 Use a systematic approach to ensure all hazards are adequately addressed.
- Step 7 Assess the risks identified or the risk has occurred by taking into account the effectiveness of current as well as controls under consideration.
- Step 8 Ensure the process is practical, realistic, cost and business effective.
- Step 9 Always record the assessment in writing including i.e. assumptions, date and why a particular decision has been made.

PS7.2.2 How serious is it?

Probability

- A Common
- B Has Happened
- C Could Happen
- D Not Likely
- E Practically impossible

Consequences

- 1 Fatality or permanent disability.
- 2 Major injury.
- 3 Average Lost Time Injury.
- 4 Minor Injury.
- 5 Medical Treatment or less.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

		Probability				
		A	B	C	D	E
Consequence	1	1	2	3	4	5
	2	2	3	4	5	6
	3	3	4	5	6	7
	4	4	5	6	7	8
	5	5	6	7	8	9
Risk rating		Action				
1 - 3 =		Immediate (within 1 week).				
4 - 5 =		Within 1 month.				
6 - 7 =		> 4 weeks.				
8 - 9 =		No action but will consider from time to time.				

PS8 ENVIRONMENTAL MANAGEMENT PLAN

Tendering Contractors are to adhere to the mitigation measures listed in the EMP (refer to Volume 2: Occupational Health and Safety Specification and Environmental Management Plan for Capital Investment Projects). Environmental mitigation measures are actions needed to align a project implementation phase with environmental control principles, where potential impacts to the natural and social environment are prevented, minimised or remediated. Environmental safeguarding is governed by various sets of legislation, with the most noteworthy for this project constituting the National Environmental Management Act (No. 107 of 1998) and the National Water Act (No. 36 of 1998).

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



PORTION 2: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS

SANS 1200A: CIVIL ENGINEERING CONSTRUCTION: PRELIMINARY AND GENERAL

VARIATIONS

Delete the following standard referenced clause:

Delete standard clause	Description	Comments
5.1.1	Setting out of the works	See clause PS 4.12: <i>Survey control and setting out of the works</i>
5.2	Watching, barricading, lighting and traffic crossings.	See clause PS 5.7 <i>Accommodation of traffic on public roads occupied by the Contractor</i>
8.8.4 (d)	Temporary protection, as required in terms of the project specification, of service.	Refer to SANS1200DB 8.3.5, It shall be deemed that the Contractor has allowed for all services protection under SANS1200DB 8.3.5 during all required construction activities.

Delete and replace the standard referenced clauses:

Delete standard clause	Replace with PSA...
5.4	<p>PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES.</p> <p>The Contractor shall be held responsible for any damage to known services (i.e. services that are within the Site of the Works and are shown on the drawings) and he shall take all necessary measures to protect them. All work or protective measures shall be subject to approval. In the event of a service being damaged, the Contractor shall immediately notify the authority concerned as well as the Engineer or his duly authorized representative. The Contractor shall not repair any such service unless instructed to do so.</p> <p>Where no underground services are shown on the drawings or scheduled but the possibility of their presence can reasonably be inferred, the Contractor shall, in collaboration with the Engineer or his duly authorized representative, ascertain whether any such services exist within the relevant section of the Site. The Contractor shall complete such investigation well in advance of the start of construction work in the said section and he shall make whatever arrangements are necessary for the protection, removal or diversion of the services before any construction work commences.</p> <p>As soon as any underground service not shown on the drawings is discovered, it shall be deemed to be a known service and the Contractor shall be held responsible for any subsequent damage to it. If such service is damaged during the course of its discovery, the cost of making good such damage shall be met by the Employer unless he establishes that the Contractor did not exercise reasonable diligence and that the damage was avoidable.</p> <p>Where the authority concerned elects to carry out on its own account any alterations or protective measures, the Contractor shall co-operate with and allow</p>

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

	such authority reasonable access and sufficient space and time to carry out the required work. Permanent alterations to or permanent diversion of services necessitated by the execution of the Works and authorized shall be paid for in terms of the conditions of contract, but no such work shall be paid for if it has not been previously inspected and if proper written instructions have not been given.
5.8	GROUND AND ACCESS TO WORKS. The Contractor shall: a) occupy only such ground as is necessary to carry out the work. b) provide and maintain such access, if not already existent, to the various sections of the Works as he requires for the proper execution of the work. c) restore, to a condition at least equivalent to their original condition, all fences and other structures that have been damaged or interfered with.
8.2.2	TIME-RELATED ITEMS No payment shall be made for time-related items, as such is to be included in the pricing for the works.

ADDITIONS

Add the following clauses:

Standard clause	Add PSA...
	... new clause: 2.9 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
5.2	...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 or his duly authorised representative.
	... new clause: 5.9 Dealing with traffic The Contractor shall comply with the requirements of the COP and PS 5.7. This clause shall be applicable for all other standard parts/sections of the works. The complete closure of any road shall not be permitted without the prior written consent of the Engineer or his duly authorised representative.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

SANS 1200DA: CIVIL ENGINEERING CONSTRUCTION: EARTHWORKS (Small Works)

VARIATIONS

Delete the following standard referenced clause:

Delete standard clause	Description	Comments
5.1.8	Road Traffic Control	The Contractor shall comply with the requirements of the COP, PS 5.7 and PSA 5.9
5.2.6.2	Overhaul	Overhaul is not applicable.

Delete and replace the standard referenced clauses:

Delete standard clause	Replace with PSDA...
5.1.1.1	5.1.1.1 Barricading and lighting Delete the existing clause and replace with the following: In terms of the applicable regulation of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983) every excavation by which the safety of persons may be endangered, shall a) be adequately protected by a rubber mesh barrier / fence of height at least 1.2m and be placed as close to the excavation as practicable; b) Provide red warning lights at night. It shall be the responsibility of the Contractor to ensure that the barricades and lights remain functional at all times.
5.2.6.1	5.2.6.1 Freehaul All distances applicable are considered as free haul distances and no additional payment shall be applicable.
8.3.1 (c): (3) and (4)	8.3.1 Excavation c) Extra-over for: 3) Boulder excavation
8.3.3	8.3.3 Overhaul Overhaul are not applicable hence all distances applicable are considered as free haul distances and no additional payment shall be applicable.

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5

**ADDITIONS***Add the following clauses:*

Standard clause	Add PSDA																								
	<p>2.1 SUPPORTING SPECIFICATIONS</p> <p>1) 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.</p> <p>The COP is available at Johannesburg Roads Agency Offices, Wayleaves Department, Contact number: (011) 298 5000</p>																								
	<p>3.4 CLASSIFICATIONS FOR HAND EXCAVATION</p> <p>Classification of material for various types of hand excavation shall 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.</p> <p>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 increase or decrease in hardness with increasing depth of excavation. Table PSDB 3.8 indicates the categories:</p> <p>TABLE PSDA: 3.4 CLASSIFICATIONS FOR HAND EXCAVATION</p> <table><tr><th rowspan="2">Category of Material</th><th colspan="2">Consistency</th><th colspan="2">DCP Blows to Penetrate 100mm</th></tr><tr><th>Granular</th><th>Cohesive</th><th>Granular</th><th>Cohesive</th></tr><tr><td><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</td><td>Up to medium dense</td><td>Firm to stiff</td><td>0-6</td><td>1-5</td></tr><tr><td><u>Intermediate</u> Intermediate excavation shall be excavation in material that require loosening with a hand spike (gwala) before being removed from the trench</td><td>Dense</td><td>Stiff to very stiff</td><td>7-15</td><td>6-8</td></tr><tr><td><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 being removed</td><td>Very dense</td><td></td><td>16-50</td><td>-15</td></tr></table>	Category of Material	Consistency		DCP Blows to Penetrate 100mm		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	<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 being removed	Very dense		16-50	-15
Category of Material	Consistency		DCP Blows to Penetrate 100mm																						
	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																					
<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 being removed	Very dense		16-50	-15																					

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



	from the trench.				
	<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 withmoil points, before being removed from the trench	-	-	>50	>15
	5.1.1.2 Safeguarding of excavations g) 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 it poses a security risk. The chambers shall be constructed as soon as possible after excavation and then backfilled. Under no circumstances shall excavations 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.				
	5.2.2 Excavation h) Where the chambers are to be constructed in surfaced roads the Contractor shall neatly cut four parallel grooves into and through the asphalt before excavating between the grooves. The cost of this operation, where not scheduled separately it shall be deemed to have been included in the general rates for excavation. i) The Contractor shall maintain the bottoms of completed excavation in good condition. Excavation bottoms that are 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. 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. Bottoms of excavation 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. 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 excavation 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, where such is not as a result of the Contractor's negligence.				
	5.2.7 Backfilling In addition to the existing clauses, backfilling work shall be carried out in accordance with the COP.				
	5.2.8 Disposal of unsuitable and surplus excavation material Excavated material that is unsuitable or has become surplus because of bulking, displacement by the chamber and/or pipework 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 or his duly authorised				

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



	representative 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 levelled at agreed sites within the area of the works.		
	5.2.9 Construction in Headings Generally in soft material the buttresses and portions of ground left for the purpose of supporting the sides of the excavations or headings providing access to private properties, shall be broken down as the refilling and compaction proceeds.		
	5.2.10 Compaction of areas subject to traffic loads 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.		
	5.2.11 Kerbing Where the Contractor has, in the process of excavating, removed kerbing, of all types of shape and all material, he shall re-instate such kerbing to its original condition with regard to alignment (vertically and horizontally). This may include cleaning, but not patching. All kerbing damaged during the removal process shall be replaced at the cost of the Contractor.		
	7.4 Quality Control Testing The JRA laboratory, where works are executed within the surfaced areas, shall carry out quality control testing of compaction densities and in-situ shear strength. Any testing by the JRA shall 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 or his duly authorised representative 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 shall 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 or his duly authorised representative'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 450mm for a distance of 2m 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 re-excavated and re-compacted as required above. Density testing along trench excavations shall be carried out at intervals, as directed by the Engineer or his duly authorised representative.		
Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

	<p>b) Trench excavations (road crossings) As for (a) above save that the backfill material shall be removed to a depth of 450mm over the full length of the trench.</p> <p>c) All other excavations As for (a) above save that the backfill material shall be removed to a depth of 450mm over the extent of the excavation.</p> <p>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.</p> <p>a) Trench excavation (other than road crossings) The layer shall be removed to its full depth for a distance of 2m 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 or his duly authorised representative.</p> <p>b) Trench excavation (road crossings) As for (a) above save that the layer shall be removed to its full depth over the full length of the trench.</p> <p>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.</p> <p>3) Premix reinstatement</p> <p>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.</p> <p>b) Trench excavations road crossings: As for (a) above save that the premix shall be removed over the full width of the road.</p> <p>c) All other excavations: As for (a) above save that the premix shall be removed over the full extent of the excavation.</p> <p>The Engineer (where the Engineer wishes to perform additional control tests) or the JRA shall not be liable for additional costs or delays arising from remedial work related to excavations, which have already been finally reinstated before their test results, become available.</p>
--	--

Employer:		Contractor	
Witness:		Witness:	

Volume	1	2					
Part	T1	T2	C1	C2	C3	C4	C5



Scope of Work

ADDITIONS

Add the following clauses: None

Standard clause	Add PSDB

Employer:		Contractor	
Witness:		Witness:	