

	REQUEST FOR BID CONSTRUCTION	Form No: RW SCM 00046 F Revision No: 03 Effective Date: February 2020
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BID NUMBER: 10397071/21

TENDER FOR CONSTRUCTION OF CHAMBERS ON H37 PIPELINE AT NORTHRIDGE AREA.

MINIMUM CIDB CONTRACTOR GRADING FOR THIS BID: 4 CE OR HIGHER

ISSUE DATE:	MONDAY, 08 NOVEMBER 2021	
NON-COMPULSORY BRIEFING SESSION DATE:	N/A	
BRIEFING SESSION VENUE:	NO BRIEFING SESSION WILL BE CONDUCTED ON RAND WATER PREMISES. A BRIEFING PRESENTATION WILL BE UPLOADED ON THE NATIONAL TREASURY WEBSITE PORTAL.	
CLOSING DATE:	WEDNESDAY, 08 DECEMBER 2021	AT 12H00PM
SITE VIEWING DATE/S:	REFER TO T1.1 BID NOTICE AND INVITATION	

BIDDER INFORMATION				
BIDDER NAME				
POSTAL ADDRESS				
STREET ADDRESS				
TELEPHONE NUMBER	CODE		NUMBER	
CELLPHONE NUMBER				
E-MAIL ADDRESS 1				
E-MAIL ADDRESS 2				
VAT REGISTRATION NUMBER			CIDB GRADING	
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		CENTRAL SUPPLIER DATABASE No:	MAAA.....
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	[TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS SWORN AFFIDAVIT (EMEs and QSEs)	[TICK APPLICABLE BOX] ☐ Yes ☐ No

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			
BUYER		SOURCING MANAGER	
CONTACT PERSON	SANDISILE NGUBANE	CONTACT PERSON	SEMAKALENG MANGOALI
TELEPHONE NUMBER	<i>SCM is currently not available on landline numbers due to Covid-19. Please submit correspondence via email</i>	TELEPHONE NUMBER	<i>SCM is currently not available on landline numbers due to Covid-19. Please submit correspondence via email</i>
E-MAIL ADDRESS (Submissions must be made to this address)	Rand Water Head Office 522 Impala Road	E-MAIL ADDRESS	smangoal@randwater.co.za

	Glenvista 2058 (in the Bid Submissions Box at the Main Gate)		
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SECTION A: BID

PART T1: BIDDING PROCEDURES

T1.1. BID NOTICE AND INVITATION TO BID

Rand Water invites bids for the tender for construction of chambers on h37 pipeline at Northridge area. The technical requirements for the equipment are fully stated in the bid documentation. Potentially emerging or other enterprises that satisfy criteria stated in the Bid Data portion of the document may submit their bid offers.	
Minimum Contractor CIDB Grading Required	4 CE OR HIGHER Contractors shall have a Contractor grading equal to or higher than a contract grading designated above.
Contracting Strategy	Develop and Construct
Classification	Complex work
Procurement Procedure	Rand Water uses a single volume approach.
Awarding Strategy	The maximum number of suppliers to be awarded this bid is 01 .
Access to the Bid Documents	The bid documents are downloadable on the National Treasury e-Tender Publication portal which can be accessed through the following link: http://www.etenders.treasury.gov.za .www.randwater.co.za No bid documents will be issued to bidders at site meetings. Please ensure that bid documents have been downloaded from the National Treasury e-Tender Publication portal prior to the site meeting date. Bids shall only be submitted on the bid documentation that is issued by the Employer. This bid document (as issued through the National Treasury e-Tender Publication portal) must be submitted in full together with the returnable documents.
Bid Clarifications	Bidders can seek clarification by no later than fifteen (15) calendar days before the bid closing date. Rand Water will provide a final response on clarifications by no later than ten (10) calendar days before the closing date. Bid clarifications will be published on the eTender Publication Portal.
Bid Addenda	Rand Water shall issue addenda, where applicable, by no later than ten (10) calendar days before the closing date. Bid addenda will be published on the eTender Publication Portal.

Bid Submission Location	Bids must be submitted before or on closing date and time at the following address: <i>Rand Water Head Office 522 Impala Road Glenvista 2058 (in the Bid Submissions Box at the Main Gate)</i>
Bid Validity	To be valid for 180 calendar days after closing date Rand Water reserves the right to extend the validity period for a period reasonable for business requirements.
Subcontracting	Bidders must utilise the National Treasury's Central Supplier Database (CSD) for identification of potential subcontractors from the pool of EMEs or QSEs to advance designated groups. The responsibility to subcontract with competent and capable subcontractor's rests with the main contractor/ supplier. As far as possible, the bidder must consider subcontractors from the area/s where the project will be taking place. Where CIDB related works are subcontracted, each Subcontractor must also be registered with the appropriate CIDB grading in accordance with the value of the work to be undertaken by that Subcontractor.
Rotation of Suppliers	In the spirit of providing equal opportunities to potential suppliers and in view of not supporting monopolies, Rand Water shall apply rotation of suppliers to ensure equitable share in Rand Water's awarded contracts.
Site Viewing Date/s, Time and Venue	5 days after issue date @ 10am Rand Water Northridge Reservoir CNR Windsor Rd and Elberfield Ave, Homestead, Germiston, Johannesburg, 1401 Co-ordinates: S26.171171 E28.183851

T1.2. BID DATA

The conditions of this bid are the Standard Conditions of Tender as contained in the document *CIDB Standard for Uniformity in Engineering and Construction Works Contracts (August 2019) Annexure C* and may be obtained from the CIDB.

The Standard Conditions of Tender for Procurement make several references to the Bid Data for details that apply specifically to this bid. The Bid 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 CIDB Standard Conditions of Tender to which it mainly applies.

CLAUSE NUMBER (CIDB)	BID DATA
C.1.1	The Employer is Rand Water.
C.1.2	The bid documents issued by the Employer are detailed on the contents page of this bid document.
C.1.4	The Employer's Representative/s is stated on the cover page of this bid document.
C.1.6.3	The Employer shall evaluate this bid in accordance with the evaluation criteria stated in this bid.
C.2.1	<i>Only those Bidders 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, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a 4 CE OR HIGHER class of construction work, are eligible to have their tenders evaluated.</i> <i>Joint ventures are eligible to submit bids provided that:</i> <i>every member of the joint venture is registered with the cidb;</i> <i>the lead partner has a contractor grading designation in the 4 CE OR HIGHER class of construction work; or not lower than one level below the required grading designation in the class of works construction works under considerations and possess the required recognition status.</i> <i>the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a or 4 CE OR HIGHER class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations.</i>
C.2.7	The arrangement for a non-compulsory site meeting (where applicable) is as stated in the Notice and Invitation to Bid.
C.2.8	The due date for seeking clarification is as stated in the Bid Notice and Invitation to Bid.

C.2.12	In addition to the information appearing in C2.12 of the CIDB Standard Conditions of Tender, the following statements shall apply: • Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative bid offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. • Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. • Pricing Data must reflect all assumptions in the development of the pricing proposal. • <i>The pricing of the alternative bid offer may not exceed the pricing of the main bid offer.</i> Acceptance of an alternative bid offer will mean acceptance in principle of the offer. In the event that the alternative bid offer is accepted, it will be a contractual obligation for the Bidder to accept full responsibility and liability that the alternative bid offer complies in all respects with the Employer's standards and requirements.
C.2.13.5 C.2.13.7	Bidders must submit one (1) copy of the bid document and returnables. The Employer's address for delivery of the bid offers is stated in the Bid Notice and Invitation to Bid. The bid submission must be sealed and endorsed with both the bid number and the description of the bid, as it appears on the front cover of this bid.
C.2.13.9	Telephonic, telegraphic, telex, facsimile or e-mailed bid offers will not be accepted.
C.2.15	The closing time for submission of bid offers is as stated in the Bid Notice and Invitation to Bid.
C.2.16	The bid offer validity period is as stated in the Bid Notice and Invitation to Bid. <i>No bid substitutions will be allowed after the closing date and time.</i>
C.2.23	See 2.1 List of Returnable Documents for a comprehensive list of certificates and additional documents required for submission with this bid.
C.3.4	Rand Water will make available the names, prices and preference points for submissions to interested parties who make request for such information, at least one (1) week after the closing date. (<i>CIDB Best Practice Guideline #A3 Evaluation tenders offers, February 2008</i>)
C.3.11	<i>Rand Water's evaluation process comprises of the following steps. Specific criteria to be utilised for this bid are contained in <u>T1.3 Evaluation Criteria</u></i> a) Pre-qualifiers <i>Refer to the criteria as stated in T1.3 of this bid document. All pre-qualifiers must be met in order for the bid submission to be considered further.</i> b) Functionality evaluation <i>Refer to the criteria as stated in T1.3 of this bid document. A minimum score of 60 points must be obtained for the bid submission to be considered further.</i> c) Price

i. Price Analysis

Rand Water uses a Financial Tolerance Range in order to assess how reasonable the market response prices are. These ranges will assist with eliminating bid prices that are deemed to be excessively high or low to complete the works. The higher limit ensures that Rand Water does not pay more than it believes the value of service or goods is worth, and the lower limit ensures that Rand Water is not exposed to risk of work not being completed or prices increasing subsequent to the award because the award price was too low to complete said scope.

ii. Preference Point System

WHERE PROCUREMENT VALUE IS R0 < R50 000 000 (INCL. VAT):

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

The following table will be used to calculate the score out of 20 for BBEE:

B-BBEE Status Level of Contributor	Number of Points
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

WHERE PROCUREMENT RAND VALUE IS >= R50 000 000 (INCL. VAT):

Where:

Ps = Points scored for comparative price of bid or offer under consideration
 Pt = Comparative price of bid or offer under consideration
 Pmin = Comparative price of lowest acceptable bid or offer.

Rand Water does not bind itself to accept the bid with the lowest price

BBBEE STATUS (Pp = 10/20 maximum)

Quantification of procurement contribution to B-BBEE

Points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

	<table><tr><th>B-BBEE Status Level of Contributor</th><th>Number of point (80/20 system)</th></tr><tr><td>1</td><td>20</td></tr><tr><td>2</td><td>18</td></tr><tr><td>3</td><td>14</td></tr><tr><td>4</td><td>12</td></tr><tr><td>5</td><td>8</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>4</td></tr><tr><td>8</td><td>2</td></tr><tr><td>Non-compliant contributor</td><td>0</td></tr></table> Bidders will not be disqualified from the bidding process for not submitting a certificate substantiating the B-BBEE status level of contribution or is a non-compliant contributor. Such a bidder will score zero(0) out of maximum of 10 for B-BBEE d) Objective Criteria Refer to the criteria as stated in <u>T1.3 Evaluation Criteria</u> of this bid document. Bidders who meet the objective criteria will be recommended for award based on the highest adjudication points. SUMMARY The total number of functionality/ quality (PF) shall be the sum total of the product of quality criteria by weight allocated. The total number of adjudication points (PT) shall equal the sum of the bid price points (Ps) and the BBBEE status points (PP) i.e. PT = Ps + PP Rand Water does not bind itself to accept the bid with the highest number of adjudication points.	B-BBEE Status Level of Contributor	Number of point (80/20 system)	1	20	2	18	3	14	4	12	5	8	6	6	7	4	8	2	Non-compliant contributor	0
B-BBEE Status Level of Contributor	Number of point (80/20 system)																				
1	20																				
2	18																				
3	14																				
4	12																				
5	8																				
6	6																				
7	4																				
8	2																				
Non-compliant contributor	0																				
C.3.17	The number of paper copies of the signed contract to be provided by the Employer is 1 (one).																				

T1.3. EVALUATION CRITERIA

T1.3.1. PRE-QUALIFIERS

1. Fully completed and signed Form of Offer.
2. Letter of Good Standing from the Department of Labour or an Accredited Institution.
3. Bidders must be 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 CIDB grading of this bid; in accordance with the CIDB prescripts

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4. Fully completed Local Content Declaration Forms for each of the designated sectors as provided and minimum stipulated thresholds for this bid, as outlined in Schedule (Page 26-30).
- 100% minimum threshold for local production and content for the steel value added products and components as stipulated in Schedule (Page 26-30) of the Commercial Part or Exemption from the Minister of Finance in the case of non-compliance to the Local Content threshold.
 - 100% minimum threshold for local production and content in respect of bagged and bulk cement produced using locally produced raw materials as stipulated in Schedule (Page 26-30) of the Commercial Part or Exemption from the Minister of Finance in the case of non-compliance to the Local Content threshold
 - 70% minimum threshold for local production and content for the different types of valves as stipulated in Schedule (Page 26-30) of the Commercial Part or Exemption from the Minister of Finance in the case of non-compliance to the Local Content threshold.
 - 80% minimum threshold for local production and content for conveyance pipes as stipulated in schedule (page 26-30) of the Commercial Part or Exemption from the Minister of Finance in case of non-compliance to the local threshold
5. Submission of Socio-Economic Development (SED) proposal in accordance with Rand Water's requirements and targets in T2.2.9 and the signing of the SED schedule in its entirety.

T1.3.2. FUNCTIONALITY EVALUATION

Bid submissions will be evaluated on the criteria outlined in items (A-J) below. Each Item (A to J) has an assigned "Weight" and "Rating" scale. During the evaluation process, Bidders shall be assigned a "Rating" for each item in A to J.

The maximum "Score" that a Bidder can achieve will be equal to the "Weight" for a particular item. The Total Scores of each functionality criterion will be multiplied by its weight and then the total score summed up to a total score out of 100.

A detailed description of the "Rating" scales and associated adjudication documentation are as follows:

	CRITERION	RETURNABLE SCHEDULE REFERENCE	WEIGHTING	RATING SCALE
A.	<u>Record of Previous Experience relevant to the current scope/ work (with contactable client ref.)</u> This is based on contractor's history of managing projects of a similar nature to this bid (a minimum of one 1MW or something higher). The reference must be written confirmation from clients and may include a completion certificate. The Contractor must have participated direct on the hydropower generation project (either design, construction or both).	T2.2.10	15	4-point scale None – 0% No submission of references or submission of projects references not related to this bid. Weak – 33.3% At least Two (2) Related Reference Moderate – 66.7% At least Three (3) Related References Good – 100% At least 5 Related References
B.	<u>Overall Performance on Previous Work</u> Overall performance score for previous work done related to this bid. The bidder must submit a record of performance on previous work which must have a percentage rating by the client and signed by the client.	T2.2.10	10	4-point scale None - 0% - No performance score sheet is submitted or the ones submitted are for the work not related to this bid. Weak – 33.3% - related work performance score sheet submitted with a rating score of less than 60%. Moderate - 66.7% - related work performance score sheet submitted with a rating score of between 60% - 80%. Good - 100% - related work performance score sheet submitted with a rating score of greater than 80%.
C.	<u>Quality Management Systems</u> Evidence of being ISO 9001 certified (certificate issued by a certification agency) or In-house QMS in place (demonstrated by submission of an approved quality management manual, at a minimum).	R1.16	10	4-point scale None – 0% Non-submission Weak – 33.3% Relevant quality management system submission is provided without both a demonstration of an approved manual and a one-page Sample of Quality Control Plan for this bid. Moderate – 66.6% Relevant quality management system with a demonstration by approved manual or ISO 9001 certificate submission is provided without a one-page Sample of Quality Control Plan for this bid.

	CRITERION	RETURNABLE SCHEDULE REFERENCE	WEIGHTING	RATING SCALE
				Good – 100% Relevant quality management system with a demonstration by approved manual or ISO 9001 certificate submission is provided with a one-page Sample of Quality Control Plan for this bid.
D.	<u>Human Resource Capacity</u> Adjudicated based on Human Resource Capacity Schedule (including company's Project Team vs. Company Organogram; Project Team Member List including CV's, resource allocation). The purpose is to establish an overall picture of the company's human resource capacity and ability to undertake the work.	T2.2.11	10	4-point scale None – 0% No submission Weak – 33.3% Only company organogram provided Moderate – 66.7% Company organogram, project team including CVs Good – 100% Submission is detailed in terms of company organogram, project team including CVs, resource allocation for this project against any other projects currently managed by the bidder.
E.	<u>Equipment Resource Capacity</u> Adjudicated based on Equipment Resource Capacity (i.e. office space and requisite tools, vehicles and working tools). The purpose is to establish an overall picture of the company's equipment resource capacity and ability to undertake the work. Rand Water will confirm the information submitted when conducting due diligence. A proof of ownership or a signed/stamped letter of intent from the supplier where you will hire the tools shall be submitted.	T2.2.12	10	3-point scale None – 0% No submission or submission of resources not related to this bid. Moderate – 66.7% Submission details equipment resource capacity excluding resource utilisation or certain equipment in relation to the scope of work with relevant proof of ownership or hiring letter of intent. Good – 100% Submission details the equipment resource capacity in terms of office space and requisite tools, resource utilisation, vehicles and working tools or more; in relation to the scope of work with relevant proof of ownership or hiring letter of intent.
F.	<u>Risk Introduced by Bid Qualifications (e.g. limitations, assumptions, limited liability etc.)</u>	T2.2.5	5	3-point scale Significant – 0% Bid qualifications submitted by the bidder adversely change the bid scope. Significant qualifications may result in bid submissions being deemed non-responsive, should the bidder/s opt to retain such

	CRITERION	RETURNABLE SCHEDULE REFERENCE	WEIGHTING	RATING SCALE
				qualifications after consultation by Rand Water. Minimal-66.7% Minimal qualifications None – 100% No bid qualification/s submitted
G.	<u>Project Risk Management</u> As per risk register provided.	T2.2.16	5	3-point scale None – 0% No response provided to Project Risk Management section or responses provided are not relevant to the identified risks. Moderate – 66.7% Relevant responses were provided to some of the risks outlined in this bid. Good – 100% Relevant responses were provided to the risks outlined in this bid and further risks were identified, classified and a response strategy and actions were provided by the bidder.
H.	<u>Detailed Project Programme</u> Aligned with employer's completion dates with the following specifications; • on a Gantt chart format • detail at least activity level 3 • resource loaded • monthly cost forecast to completion.	R1.17	15	4-point scale None – 0% No submission Weak – 33.3% Only Gantt chart format Moderate – 66.7% Only Gantt chart, resources loaded and activity level 3 without cash-flow forecast Good – 100% Provided all of above (Gantt chart format, activity level 3, resources loaded and monthly cost forecast to completion)
I.	<u>Method Statement</u> • Specific method statement in accordance with the scope of work. • Aligned with Contractual requirements. • Credible/Acceptable • Outline the ✓ Design approach. ✓ Construction approach. ✓ Quality and safety management	R1.18	15	4-point scale None – 0% No submission Weak – 33.3% Method Statement addressing up to 30% of the deliverables Moderate – 66.7% Method statement detailing 70% of the deliverables Good – 100% Method statement detailing all of the deliverables
J.	<u>SHERQ</u>	R1.11	5	4 - point scale

	CRITERION	RETURNABLE SCHEDULE REFERENCE	WEIGHTING	RATING SCALE
	Adjudicated based on Contractors Health & Safety Policy, Plan and documentation submitted			None – 0% Non-submission Weak – 33.33% SHERQ documents submitted without signed SHE Policy. Good - 100% All SHERQ document submitted (signed policy, SHE Plan and other relevant documents) Acceptable – 100% Relevant submission is provided.
TOTAL			100	

T1.3.3. PRICE

Rand Water uses a Financial Tolerance Range in order to assess how reasonable the market response prices are. These ranges will assist with eliminating bid prices that are deemed to be excessively high or low to complete the works. The higher limit ensures that Rand Water does not pay more than it believes the value of service or goods is worth, and the lower limit ensures that Rand Water is not exposed to risk of work not being completed or prices increasing subsequent to the award because the award price was too low to complete said scope.

The financial tolerance range for this bid is **-20% to 20%**.

T1.3.3. PREFERENCE POINT SYSTEM

The **80/20** will be applied in this bid.

The 80/20 preference point system will apply and the lowest acceptable bid will be used to determine the applicable preference point system;

Further information can be obtained in [T.1.2 Bid Data](#).

T1.3.4. OBJECTIVE CRITERIA

Rand Water shall apply objective criteria in accordance with the 2017 Preferential Procurement Regulations.

Rotation of suppliers for bids will be done on the following conditions:

- a) *Aggregate value of R250 million (inclusive of all taxes) awarded.*
- b) *Where an award to be made to the supplier results in the cumulative value exceeding the rotation threshold for bids, that award can be made which will constitute the last award to the supplier in the financial year.*
- c) *As its objective criteria, Rand Water shall therefore not award to a Bidder that scores the highest points, if such Bidder has already exceeded the rotation threshold for bids.*

In making the determination on the aggregate value of work awarded to a supplier, Rand Water shall consider the supplier's relations and as such, where Rand Water had awarded work to entities and/or persons that are related and/or inter-related to the supplier, the value of such awards shall be used as a measure of assessing the aggregate value of the work awarded to the supplier.

PART T2: RETURNABLE DOCUMENTS

T2.1. LIST OF RETURNABLE DOCUMENTS

T2.1.1 All documentation listed in table T2.1 below shall form part of the Contract. *The Bidder must utilise this list as a checklist prior to bid submission.*

T2.1.2 Non-submission of any item listed only under the column "Required for Bid Evaluation" may result in the bid being rejected by the Employer.

T2.1.3 Attach additional pages if more space is required.

Table T2.1 List of Returnable Documents

ITEM	DESCRIPTION OF DOCUMENT TO BE RETURNED	REQUIRED FOR BID EVALUATION	ONLY REQUIRED AFTER BID AWARD
T2	Returnable schedules (supplied with the bid document)		
T2.2.1	Compulsory Enterprise Questionnaire including SBD 4, 6.1, 6.2, 8 and 9	•	
T2.2.2	Record of Addenda to Bid Documents	•	
T2.2.3	Proposed Subcontractors	•	
T2.2.4	Alternative Bid	N/A	
T2.2.5	Qualifications to Bid	•	
T2.2.6	Requirements with regard to fluctuations in the cost of labour and materials	•	
T2.2.7	FOB Prices of imported equipment/materials for which foreign exchange would be required and importing charges	•	
T2.2.8	Declaration of Insurance	•	
T2.2.9	Socio-Economic Development Plan	•	
T2.2.10	Record of Previous Experience, Quality of Workmanship and Safety	•	
T2.2.11	Human Resource Capacity Schedule	•	
T2.2.12	Equipment Resource Capacity (Plant and Equipment)	•	
T2.2.13	Safety, Health, and Environment	•	
T2.2.14	Details of Equipment (including manufacturer's data sheets and technical publications)	•	
T2.2.15	Recommended Spares, Special tools and servicing facilities	•	

ITEM	DESCRIPTION OF DOCUMENT TO BE RETURNED	REQUIRED FOR BID EVALUATION	ONLY REQUIRED AFTER BID AWARD
T2.2.16	Project Risk Management	•	
T2.2.17	Penalty Table	•	
C1.1	Letter of Bid (Form of Offer and Acceptance)	•	
C1.2	Contract Agreement		•
C2.2	Pricing Schedule / Bill of Quantities (BoQ) The Bidder is required to submit the following: - Excel® format of the completed pricing schedule or BoQ in a compact disc (CD) or USB flash drive. - Printed format and signed version of the completed pricing schedule or BoQ.	•	
C3.1	Dates for Delivery and Completion NOTE: A DETAILED PROJECT PROGRAMME MUST BE INCLUDED WITH THE BID SUBMISSION	•	
R 1	Required documentation not issued with the bid document:		
R 1.1	Certificate of Contractor Registration issued by CIDB OR A copy of the application form for registration in terms of the CIDB Act	•	
R 1.2	Proof of tax compliance status and a valid SARS Tax PIN	•	
R 1.3	Letter of Good Standing from the Department of Labour or an Accredited Institution	•	
R 1.4	Performance Guarantee / Bond		•
R 1.5	Resolution Letter for the Main Contractor (a letter authorising the person completing the bid to sign on behalf of the company)	•	
R 1.6	Resolution Letter for the Subcontractor/s (a letter authorising the person completing the bid to sign on behalf of the company)	•	
R 1.7	Subcontracting Agreement	N/A	
R 1.8	3 year financial statements (audited where applicable)	•	
R 1.9	Certified copy of B-BBEE Certificate or Certified copy of Sworn Affidavit for EMEs or QSEs	•	
R1.10	Main Contractor's internal Safety and Health Policy and Project Specific SHE Plan (compliance with the project specific SHE specification)	•	
R 1.11	Comprehensive SHERQ Plan (compliance with SHERQ Specification, including written agreement on Safety, Health and Environmental matters and all documents required for SHERQ compliance)	•	
R1.12	Contractors tools and Equipment Inventory	•	

ITEM	DESCRIPTION OF DOCUMENT TO BE RETURNED	REQUIRED FOR BID EVALUATION	ONLY REQUIRED AFTER BID AWARD
R1.13	Staff list	•	
R1.14	Site Clearance Certificate		•
R1.15	Job Creation Report/Statistics (To be submitted Monthly)		•
R1.16	ISO 9001 Certification /proof of In-house Quality Management System (must include proof of a Document Control System and proof of a Non-conformity Management System) including Sample/template of Quality Control Plan and appointment of Quality Representative	•	
R1.17	Detailed Project Programme in the following: a) Gantt Chart Format b) Level 3 schedule activities c) Credible and Aligned to Rand Water's Programme d) Resource loaded schedule Monthly cash flows, project to completion.	•	
R1.18	Method Statement	•	

T2.2. RETURNABLE SCHEDULES

T2.2.1. COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: CSD Number:

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

Name *	Identity Number *	Personal income tax number *

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

Section 6: Particulars of companies and close corporations

Company registration Number:	
Close Corporation number:	
Tax reference number:	

Section 7: SBD 4 issued by National Treasury must be completed for this bid.

Section 8: SBD 6 issued by National Treasury must be completed for this bid.

Section 9: SBD 8 issued by National Treasury must be completed for this bid.

Section 10: SBD 9 issued by National Treasury must be completed for this bid.

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

- authorizes the employer to verify the Bidders tax clearance status from the South African Revenue Services that it is in order;
- confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- confirms that I / we are not associated, linked or involved with any other bidding entities submitting bid offers and have no other relationship with any of the Bidders 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.

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

Date:

SBD 4

DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state*, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest, where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

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

2.1 Full Name of bidder or his or her representative:

2.2 Identity Number:

2.3 Position occupied in the Company (director, shareholder etc):

2.4 Company Registration Number:

2.5 Tax Reference Number:.....

2.6 VAT Registration Number:

* "State" means –

- (a) 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);
- (b) any municipality or municipal entity;
- (c) provincial legislature;
- (d) National Assembly or the National Council of Provinces; or
- (e) Parliament.

- 2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

- 2.7.1 If so, furnish the following particulars:

Name of person / director / shareholder/ member:

Name of state institution to which the person is connected:

Position occupied in the state institution:

Any other particulars:

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

2.8 Did you or your spouse, or any of the company's directors / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:

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

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1 If so, furnish particulars.

.....
.....

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between the bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.10.1 If so, furnish particulars.

.....
.....

2.11 Do you or any of the directors /shareholders/ members of the company have any interest in any other related companies whether or not they are bidding for this contract?

2.11.1 If so, furnish particulars:

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

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

Full Name	Identity Number	Personal Tax Reference Number	State Employee Number / Persal Number

4 DECLARATION

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

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2.1 TO 2.11.1 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

Date:

SBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

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

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

1. GENERAL CONDITIONS

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

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

1.2

a) The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable; or

b) The 80/20 preference point system will be applicable to this bid.

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

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

	POINTS
PRICE	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 B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

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

2. DEFINITIONS

- (a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **"B-BBEE status level of contributor"** means the B-BBEE status of an entity in terms of a

code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

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

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 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 price of bid under consideration
- P_t = Price of bid under consideration
- $P_{\min}$ = Price of lowest acceptable bid

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

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

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

5. BID DECLARATION

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

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

- 6.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

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

(Tick applicable box)

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

- 7.1.1 If yes, indicate:

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

(Tick applicable box)

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

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

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

In the case of more than one subcontractors, submit a list of subcontractors with the above details (7.1.1)

8. DECLARATION WITH REGARD TO COMPANY/FIRM

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

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

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

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

8.6 COMPANY CLASSIFICATION

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

- 8.7 Total number of years the company/firm has been in business:.....
- 8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:
- i) The information furnished is true and correct;
 - ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
 - iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor 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) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

SBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

This Standard Bidding Document (SBD) 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 bids 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 bids 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:

	Description of services, works or goods	Stipulated minimum threshold (%)
1.	Steel value added products and components	100%
2.	Bagged and bulk cement	100%
3.	Valves	70%
4.	Conveyance pipes	80%

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

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

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

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

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

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

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

IN RESPECT OF BID NO. 10397071/21

ISSUED BY: RAND WATER

NB

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

I, the undersigned, (full names),

do hereby declare, in my capacity as

of(name of bidder entity), the following:

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

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

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

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

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

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

(C1)	Tender No.
(C2)	Tender description:
(C3)	Designated product(s)
(C4)	Tender Authority:
(C5)	Tendering Entity name:
(C6)	Tender Exchange Rate:
(C7)	Specified local content %

Note: VAT to be excluded from all calculations

Pula EU GBP [illegible]

(C20) Total tender value	R 0
--------------------------	-----

(C21) Total Exempt imported content	R 0
-------------------------------------	-----

(C22) Total Tender value net of exempt imported content	R 0
---	-----

(C23) Total Imported content	R 0
------------------------------	-----

(C24) Total local content	R 0
---------------------------	-----

(C25) Average local content % of tender	
---	--

Signature of tenderer from Annex B

Date: _____

SBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Standard Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by institutions 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 disregarded if that bidder, or any of its directors have-
 - a. abused the institution's supply chain management system;
 - b. committed fraud or any other improper conduct in relation to such system; or
 - c. failed to perform on any previous contract.
- 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 ☐	No ☐
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 ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐

4.4.1	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.

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

Date:

SBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) 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 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
 - a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
 - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- 4 This SBD 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 (SBD 9) must be completed and submitted with the bid:

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

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

10397071/21: TENDER FOR THE CONSTRUCTION OF CHAMBERS ON H37 PIPELINE AT NORTHRIDGE AREA

(Bid Number and Description)

in response to the invitation for the bid made by:

RAND WATER

(Name of Institution)

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.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.2. RECORD OF ADDENDA TO BID DOCUMENT

We acknowledge receipt of communications from the Employer amending the bid document before the submission of this bid offer. We confirm that these amendments have been taken into account in this bid offer.

Notice Number	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.3. PROPOSED SUBCONTRACTORS

We notify the Employer that it is our intention to employ the following Subcontractors for work in this contract.

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then on official award of Contract by the Employer to us, this list duly signed below shall be binding between us.

The appointment of the proposed Subcontractors shall be subject to the approval of the Employer.

Please note it is compulsory to declare the percentage of work to be completed by the Subcontractor.

Name and Address of Proposed Subcontractor	Nature and Extent of Work	Previous Experience with Subcontractor	CIDB Grading
1)			
2)			
3)			
4)			
5)			

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.4. ALTERNATIVE BID

- T2.2.4.1. Alternative bids will be accepted on the conditions described in [T1.2 Bid Data](#) (CIDB Clause C2.12)
- T2.2.4.2. Should the Bidder wish to submit an alternative bid he shall set out his proposals clearly hereunder or alternatively state them in a covering letter attached to his bid and referred to hereunder, failing which the bid will be deemed to be unqualified.
- T2.2.4.3. If no departures or modifications are described, the schedule shall be marked NIL and signed by the Bidder.

Page	Item	Proposed alternative	Price saving (if any) to the Employer if proposal is accepted

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____



Should the Bidder wish to qualify any aspect of the bid (e.g. limitations, assumptions, limited liability, etc.), he shall set out his terms clearly hereunder or alternatively state them in a covering letter attached to his bid and referred to hereunder, failing which the bid will be deemed to be unqualified.

If no qualifications are made, the schedule shall be marked NIL and signed by the Bidder.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Name of Bidder: _____

Signed by or on _____ Official
behalf of Bidder: _____ Capacity: _____

Date: _____

T2.2.6. REQUIREMENTS WITH REGARD TO FLUCTUATIONS IN THE COST OF LABOUR AND MATERIALS

T2.2.6.1. The Bidder shall delete whichever of the following statements are not applicable to the bid. *Where the Bidder has not indicated the applicability of fluctuations, Rand Water shall regard the fluctuations as not applicable.*

FLUCTUATIONS IN - Wages and allowances: *TO APPLY/NOT TO APPLY
Price of materials: *TO APPLY/NOT TO APPLY

* Delete whichever is not applicable.

FORMULAE OR BASIS FOR THE ADJUSTMENT OF THE BID PRICE

If firm prices are not quoted the Bidder shall supply the following information:

T2.2.6.2. Formula by which the bid price is to be multiplied in order to arrive at the adjusted price:

.....
.....

T2.2.6.3. Definition of all symbols used in the above formula:

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

T2.2.6.4. Any special materials or equipment to be excluded from the application of the formula stating the method and basis of price variation to be applied to such materials or equipment:

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

RECORDING OF WEATHER AND ABNORMAL RAINFALL

If during the time for completion of the works or any extension thereof abnormal rainfall or wet conditions shall occur then an extension of time in accordance hereof shall be granted by the Employer calculated in accordance with the formula given below for each calendar month or part thereof.

$$V = (Nw - Nn) + ((Rw - Rn)/X)$$

V	Extension of time in calendar days in respect of the calendar month under consideration.
Nw	Actual number of days during the calendar month on which a rainfall of Y mm or more has been recorded.
Nn	Average number of days, as derived from existing rainfall records, on which a rainfall of Y mm or more has been recorded for the calendar month.
Rw	Actual rainfall in mm recorded for the calendar month under consideration.
Rn	Average rainfall in mm for the calendar month as derived from existing rainfall records.

For purposes of the contract Nn, Rn, X and Y shall have those values assigned to them in the Contract Data and/or the Specification. The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for part of a month to be calculated using pro rata values of Nn and Rn. This formula does not take account of flood damage that could cause further or concurrent delays and will be treated separately as far as extension of time is concerned.

The factor (Nw-Nn) shall be considered to represent a fair allowance for variations from the average number of days during which rainfall exceeds Y mm. The factor (Rw-Rn)/X shall be considered to represent a fair allowance for variations from the average in the number of days during which the rainfall did not exceed Y mm but wet conditions prevented or disrupted work.

The following average rainfall figures are applicable:

INFORMATION SOURCE: South African Weather Service
Pretoria, Tel.: 082 233 8484

Y = 10 mm/24 hour day; X = 20 mm

**STATISTICAL INFORMATION: GERMISTON
STATION: 2020**

Month	RAINFALL	
	Nn = Average number of days during the calendar months in which a rainfall of more than Y-mm has been received	Rn = Average monthly rainfall
January	5.2	132
February	4.3	108
March	3.5	90
April	1.7	44
May	0.7	17
June	0.3	8
July	0.2	4
August	0.4	11
September	0.9	24
October	3.1	77
November	4	102
December	5.4	136
Total	29.7	753

The Contractor shall be permitted to take his own rainfall measurements on site subject to the Engineer's approval, but access to the measuring gauge(s) shall be under the Engineer's control. The Contractor is to provide and install all the necessary equipment for accurately measuring the rainfall as well as to provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.7. F O B PRICES OF IMPORTED EQUIPMENT/MATERIALS FOR WHICH FOREIGN EXCHANGE WOULD BE REQUIRED AND IMPORTING CHARGES

- T2.2.7.1. The Bidder shall complete each schedule listing the F O B value of all items of equipment/materials for which foreign exchange would be required.
- T2.2.7.2. Bidders based on the supply of locally manufactured equipment and/or materials priced competitively, will be given preference by the Employer provided such equipment and/or materials, and the manufacture thereof, are of sufficiently high standard to meet the Employer's requirements.
- T2.2.7.3. If no items are to be imported or if firm prices are submitted the relevant section of the schedule shall be marked NIL. If the equipment contains imported equipment/materials then the Bidder shall complete the schedule listing the F O B value of all items of equipment/materials, which have been or are to be imported. Prices tendered for this imported equipment/material shall be quoted in **currency of origin**. It will therefore be the responsibility of the employer (Rand Water) to take out a Forward Cover for this imported equipment/material, when and if deemed prudent. All charges for the Employer's account referred to in the General Conditions of Contract and any changes in the rates of exchange will only be paid or allowed by the Employer in respect of items listed in this schedule. Bidder shall be expected to provide full documentation (i.e. Invoice, Bill of Lading, etc.) supporting foreign currency requirements for this imported equipment/material to support the Employer application to the SARB for the exchange control approval.
- T2.2.7.4. The Bidder shall sign each schedule.
- T2.2.7.5. For evaluation purposes, the prices of imported equipment/material sourced directly from outside South Africa quoted in currency of origin will be converted to Rand using the closing rate exchange rate published by SARB on the date, one week (7 day calendar days) prior to the closing date for the Bidder.

"Imported content" means that portion of the price represented by the cost of components, parts or materials which have been, or are still to be imported (whether by the Bidder or his suppliers or Subcontractors) and which cost includes the overseas cost plus direct importation costs, such as freight, all landing charges, dock dues, import duties and the like at the South African port of entry, as well as inward transportation and handling to the factory in the Republic where the equipment offered is produced, manufactured, processed, assembled, packed or otherwise prepared.

The Bidder shall state in the appropriate column the F O B values of equipment/materials, which have already been imported, and which still have to be imported.

Item	Description and country of origin	Rate of exchange	F O B value	
			Already imported	To be imported
			R	R
Total F O B values				

Table T2.2.7.1: F O B Prices

The exchange rate to be used for conversion of the foreign content to local content shall be the closing exchange rate published by South African Reserve Bank (SARB) on the date, one week (7 day calendar days) prior to the closing date of the Bid.

IMPORT PERMIT: The Bidder shall state what arrangements have been or are to be made to obtain the necessary import permit(s).

.....

.....

Item	Rate	Total
PORT OF LANDING	R	R
Freight on tons at		
Insurance on R		
Customs duty on R		
Landing charges on tons at		
Wharfage on tons at		
Forwarding and agency on tons at		
Railage on kg at		
Sundry importing charges		
.....		
TOTAL:		

Table T2.2.7.2: F O B Prices

Guaranteed date of shipping

Guaranteed date of delivery to railway authority

Name of Bidder:

Signed by or on _____ Official
behalf of Bidder: _____ Capacity: _____

Date: _____

T2.2.8. DECLARATION OF INSURANCES

I/We hereby declare that the insurance policies enumerated below have been effected by me/us in accordance with the Contract Data.

Cover effected	Insurer	Policy	Expiry date
COID			
Unemployment Insurance			
Employer's Liability			
Motor Vehicle Liability			
Contractor's Equipment			
Manufacturing/Fabrication Premises			
Professional Indemnity	as applicable		

Table T2.2.8: Declaration of Insurance

Copies of the abovementioned policies are attached.

In respect of COID, a copy of the current receipt and letter of good standing is attached.

Name of Contractor: _____

Signed by or on behalf of Contractor: _____ Official Capacity: _____

Date: _____

NOTE: This schedule shall be completed and submitted to Rand Water within 14 days from the commencement date of the contract and will serve as a condition precedent. The Contractor shall ensure that all policies are in place for the full period under the contract, and where policies need to be renewed and/or any changes effected, Rand Water is to be provided with the renewal confirmation and/or details of changes within 14 days of such renewal or changes.

T2.2.9. SOCIO-ECONOMIC DEVELOPMENT

Rand Water intends to achieve the objective of promoting an environment that is health, safe, efficient, productive, harmonious, free from disruption and localises opportunities for communities in close proximity to the project. Such an environment will assist contractors in implementing the projects successfully. All contractors, subcontractors (including SMMEs) and site service providers within the project have a role and responsibility in achieving this objective. Accordingly, the Main Contractor is wholly responsible in ensuring the provision, implementation and maintenance of the required socio-economic deliverables, as approved by Rand Water.

The Bidder shall submit a plan with regard to SED targets set by Rand Water for each respective SED element during the Request for Bid (RFB) phase. Bidders have to submit SED plans as part of their proposals in reaction to the RFB. Bidders are required to demonstrate through their SED plans how the involvement of black persons and historically disadvantaged individuals (HDIs) will be secured, as well as their commitment to the respective SED elements.

Rand Water regards the **local-to-site area** as historically disadvantaged areas in the district municipality. In areas that are not demarcated according to district municipalities, the historically disadvantaged areas in the metropolitan municipalities shall be regarded as local-to-site areas.

Key performance areas and deliverables on SED are outlined as follows:

ITEM NO.	KEY PERFORMANCE AREAS	DELIVERABLES
1.	Participation of Local Enterprises	- The Bidder must ensure that in the project implementation plan the following target is prioritized and this must be clearly outlined in the declaration of intent: Work allocation to local enterprises A minimum of 5% of the total work will be allocated to local black owned enterprises. The Bidder must specify in the SED plan the work items to be allocated to local enterprises that are minimum 51% black owned. This plan must also indicate the Rand value and the scope of work. Rand Water's Database of Local Business for the target area/s will be availed.
2.	Job Creation	- The Bidder's workforce in the project must consist of locals (historically disadvantaged) as follows: - Unskilled Labourers: 100% (50% women, 50% youth) - Semi-skilled: a minimum of 30% (50% women, 50% youth) - Skilled: a minimum of 25% (50% women, 50% youth) - The method of recruitment must be pre-approved by Rand Water. - It is acknowledged that people will be employed on a part-time basis in many instances. It is however required that employees who were employed at the unskilled level exit with a certificate of completion of accredited training.

ITEM NO.	KEY PERFORMANCE AREAS	DELIVERABLES
		A recruitment plan must be submitted which will indicate how the employment of local labour will be achieved versus the Bidder's existing (permanent) and seconded labour which will be assigned to the project.
3.	Skills Development	- The Bidder must submit a proposed skills development programme targeting the following levels: - Unskilled to Semi-skilled (50% Youth, 50% Women) - Undergraduate (50% Youth, 50% Women) - Graduate (50% Youth, 50% Women) - The proposed programmes must be accredited, giving credit value to the beneficiaries. The programmes must incorporate workplace learning and/or on-the-job training with the theoretical knowledge provided. - Programmes can only be implemented once approval has been provided by Rand Water.
4.	Social Responsibility	- A programme must be structured to ensure effective delivery to address identified community needs in a significant and sustainable manner. - The Bidder must submit proposed social responsibility initiative/s which could be rolled out across the project duration and must have impact beyond the project implementation. Examples may include Cooperative Development, NGO Support, School Support - Programmes can only be implemented once approval has been provided by Rand Water.
5.	Social Facilitation	- A key component in aiding the realisation of the SED objectives is effective community liaison with all the relevant role-players, structures, civic organisations and the community at large. - Provision must be made for a Community Liaison Officer (CLO) for the duration of the project. The CLO must be sourced locally.

The Bidder agrees to adhere to the Rand Water's SED requirements.

Name of Bidder: _____

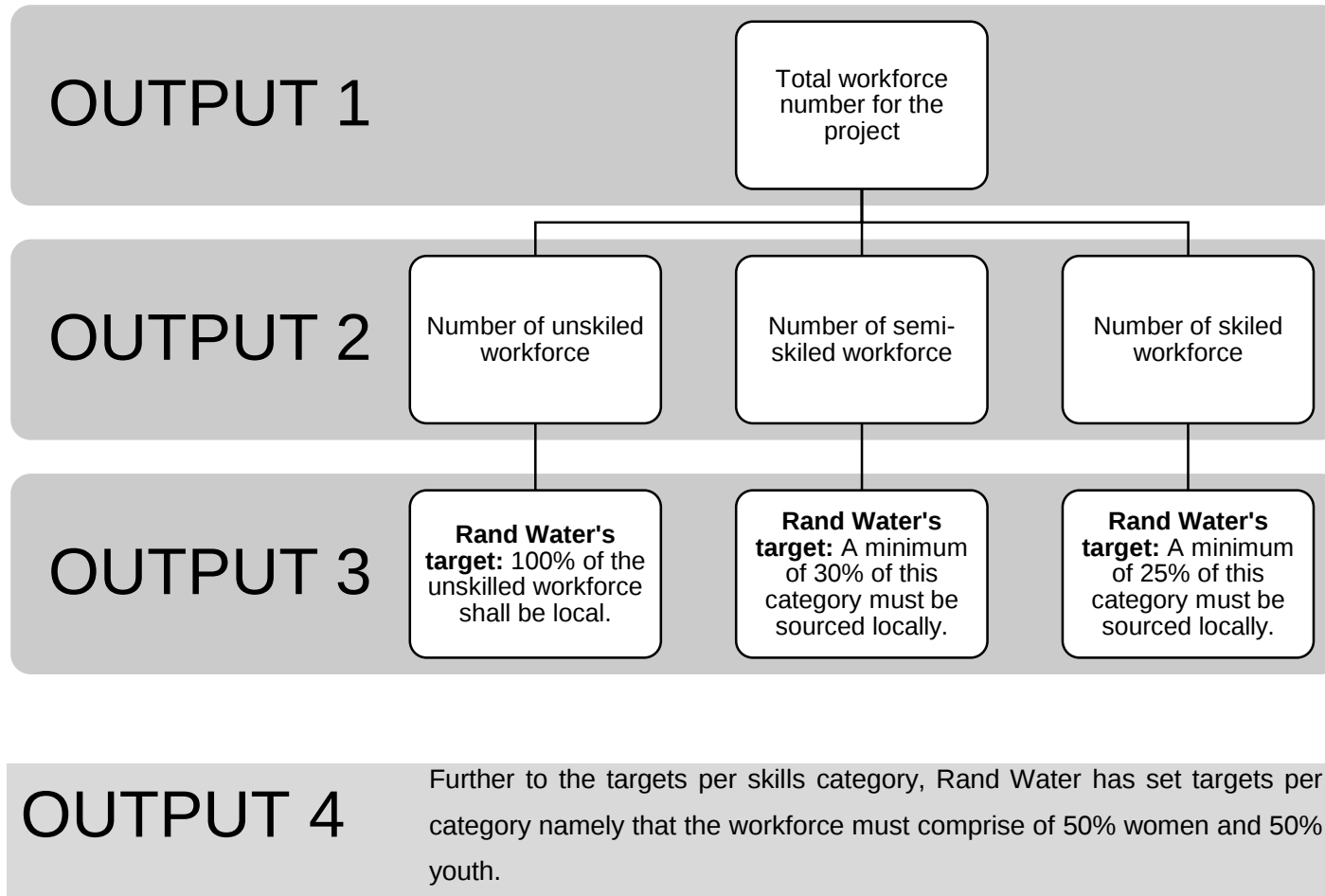
Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.9.1. JOB CREATION REQUIREMENT

The Bidder's recruitment plan must indicate the following information:



The Bidder must ensure that the required recruitment plan adheres to the requirements of this section and must also include a proposed method of recruitment.

The Bidder agrees to adhere to the Rand Water's SED requirements.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.9.2 SED MATRIX

KEY PERFORMANCE AREA	INDICATOR	MEASURE	TARGET	QUANTITY	COST	TIMELINE			COMMENTS
						START	END	DURATION	
Job Creation <i>Total workforce number for the project:</i> <i>(insert)</i> 	Employment: Unskilled <i>Insert Rate:</i>	Percentage of total projected workforce in the skills category	100%						
	Employment: Semi-skilled <i>Insert Rate:</i>	Percentage of total projected workforce in the skills category	Minimum 30%						
	Employment: Skilled <i>Insert Rate:</i>	Percentage of total projected workforce in the skills category	Minimum 25%						
Skills Development	Accredited Training Programmes: Unskilled (MANDATORY)	Rand Value	Rand value of 18.1 in the BoQ						
		Number of unskilled people trained on accredited training	Number of unskilled indicated in the Bidder's recruitment plan						
	Work Integrated Learning: Undergraduates	Rand Value	Rand value of 18.1 in the BoQ						
		Number of undergraduates trained and provided workplace experience	Number of unskilled indicated in the Bidder's recruitment plan						
	Professionalisation Programmes: Graduates	Rand Value	Rand value of 18.1 in the BoQ						
		Number of graduates trained	Number of unskilled						

KEY PERFORMANCE AREA	INDICATOR	MEASURE	TARGET	QUANTITY	COST	TIMELINE			COMMENTS
						START	END	DURATION	
		and provided workplace experience	indicated in the Bidder's recruitment plan						
Social Responsibility	Community development initiatives	Rand value	Rand value of 18.3 in the BoQ						
Social Facilitation	Appointment of CLOs	Rand value	Rand value of 18.4 in the BoQ						
Participation of Local Enterprises	Work allocated to local enterprises that are 51% black owned	Rand value	Rand value in section 5 item 5.3.6.5 and 5.3.6.6						
	Procurement of non-core services and materials from local enterprises that are a minimum 51% black owned	Rand value	100%						
TOTALS					The Bidder must indicate the total cost				

Rand Water will commence the monitoring of SED implementation three (3) months after the acceptance of the letter of award by the successful Bidder. The Bidder agrees to adhere to the Rand Water's SED requirements.

Name of Bidder: _____

Signed by or on behalf of Bidder: _____ Official Capacity: _____

Date: _____

T2.2.9.3. SED CHECKLIST

All items in this checklist must be completed. If any of the items are not addressed as required (i.e. indicated as "No" or no attachment where an attachment is required), the Bidder's submission will be deemed non-responsive.

	ITEM	REQUIREMENT	YES	NO
1.	Job Creation	Attach the Recruitment Plan (refer to T2.2.13.1)		
2.	Skills Development	Attach a comprehensive proposal for training programmes for unskilled, undergraduate and graduate, as applicable. The provision of accredited training for the unskilled group is a mandatory requirement.		
3.	Social Responsibility	Attach a comprehensive proposal for local community development.		
4.	Participation of Local Enterprises	- The work highlighted for Participation of Local Enterprises is work that must be issued to local enterprises that are a minimum 51% black owned. This is a minimum. The Bidder must ensure that the work to be allocated to local enterprises amounts to a minimum of 5% of the whole work. This must be indicated clearly in the Bidder's SED plan. - The sourcing of local enterprise shall be a competitive process. The method of sourcing must be pre-approved by Rand Water. - Attach a procurement plan for non-core services and materials required. Rand Water's target is that the Bidder must procure 100% of these services and materials from local enterprises that are a minimum 51% black owned.		
5.	Social Facilitation	The Bidder must provide the costing with reference to 18.4 .		

The Bidder agrees to adhere to the Rand Water's SED requirements.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.10. RECORD OF PREVIOUS EXPERIENCE, QUALITY OF WORKMANSHIP AND SAFETY

The Bidder shall provide details of **completed** works (similar to the work set out in this bid). Individuals listed as references must be contactable and willing to provide information relating to the performance of the Bidder (in terms of safety and health, workmanship, documentation, timeous completion, etc.). In order to verify the quality of workmanship, an inspection of the works may also be undertaken should Rand Water deem it necessary.

The Bidder must take into cognisance the functionality criteria in providing the record of previous experience. Information must be provided in the following format:

Description of Works	
Project Title :	
High level project description:	
Client :	
Contract No. :	
Contract Value (excl. VAT) :	
Role ^(Note 1) :	
Award Date :	
Completion Date :	
Location of Works :	
Project Manager :	
Construction Manager :	
Contact Details of Reference at Client Company	
Name :	
Position Held :	
Tel :	Cell :
Fax :	email :
Note 1 – Role refers to the Contractor's responsibility w.r.t. the claimed experience. For example Single Contractor, Main Contractor but with electrical sub – contractor, Sub – contractor for civil construction etc.	

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

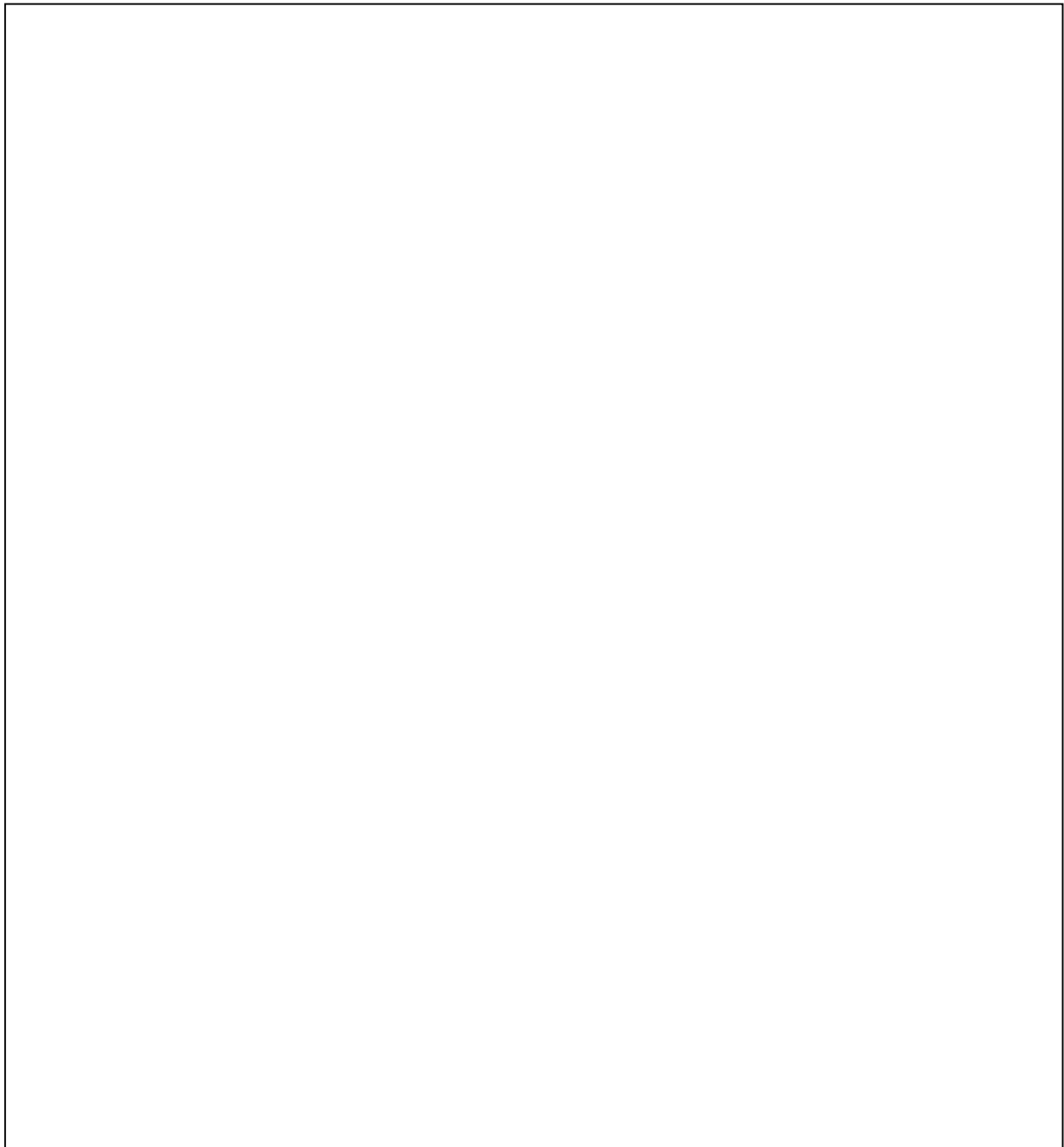
Date:

T2.2.11. HUMAN RESOURCE CAPACITY SCHEDULE

The aspects covered by T2.2.11.1, T2.2.12.2 and T2.2.12.3 will be viewed in conjunction with each other to establish an overall picture of the Bidder's capacity and ability to undertake the work specified in this document.

T2.2.11.1. Project Team Organogram vs. Company Organogram

The Bidder shall detail in the block below their company organogram and the Resources dedicated to this contract must be clearly indicated. In addition, sub-contractor and Joint-Venture arrangements must be clearly indicated:



cont.

[illegible]

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T2.2.11.3. List of Current Contracts (Work Load)

Contract or Work Title	Client	Contract Value (excl. VAT)	Role ^{NOTE 1}	Progress
				Award Date: Completion Date: % Complete: Stage ^{NOTE2} :
				Award Date: Completion Date: % Complete: Stage ^{NOTE2} :
				Award Date: Completion Date: % Complete: Stage ^{NOTE2} :
				Award Date: Completion Date: % Complete: Stage ^{NOTE2} :
				Award Date: Completion Date: % Complete: Stage ^{NOTE2} :

NOTES

- Role refers to the Contractor's responsibility w.r.t. the claimed experience for example Single Contractor, Main Contractor but with Electrical subcontractor, Sub-contractor for civil construction etc.
- Stage refers to the current stage of the work (example design, procurement, construction, installation, commissioning, handed over, in Defects Liability Period etc.)
- Attach additional signed copies of this schedule if insufficient space is available.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.12. EQUIPMENT RESOURCE CAPACITY (PLANT AND EQUIPMENT)

The following are lists of major items of relevant equipment that are presently owned / leased / hired or planned to be purchased / leased / hired and will be available for this contract if the bid is accepted:

Qty	Equipment Description (including capacity/size etc)	Currently Own / Currently Lease or Hire / Plan to Purchase / Plan to Lease or Hire	% Utilisation	
			On other Contracts / Work	On this Contract/ Work

I, the Bidder, guarantee that all the above listed plant and equipment is readily available and/or will be provided when required on the works and maintained on the site in good condition and working order.

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.13. SAFETY, HEALTH, AND ENVIRONMENT

1. Safety and Health Policy

Bidders shall submit a copy of their company's internal Safety and Health Policy.

2. Safety, Health and Environment (SHE) Plan

Bidders shall submit the project specific SHE plan as per the project specific SHE Specification

3. Safety, Health and Environment (SHE) Risk assessment

Bidders shall submit the project specific SHE risk assessment.

4. Construction Health and Safety Manager / or Officer

Bidders shall submit the details of the name and particulars of the person proposed to be appointed as the Construction Health and Safety Manager/or Officer (include proof of registration with SACPCMP).

5. DIFR Status

Bidders shall furnish their DIFR Status for 2 years in the table below, based on the following formula.

$$DIFR \text{ (annual)} = \frac{(\text{Number of Disabling Injuries})(200000)}{(\text{Number of Hours Worked})}$$

Number of Hours Worked (annual) = Total Number of Employees x Average Hours Worked per Employee per Year

	Current Year	Last Year
Number of Disabling Injuries		
Total Number of Employees		
Average Hours Worked per Employee per Year		
Number of Hours Worked per Year		
Calculated DIFR		

Table T2.2.17: Safety, Health, and Environment

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

Date:

[illegible]

Name of Bidder: _____

Signed by or on _____ Official
behalf of Bidder: _____ Capacity: _____

Date: _____

T2.2.15. RECOMMENDED SPARES, SPECIAL TOOLS AND SERVICING FACILITIES

Number recommended	Description	Price each
		R

SERVICING FACILITIES (Name and address of depot and available facilities).

.....

.....

.....

Special tools provided

.....

.....

.....

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.16. PROJECT RISK MANAGEMENT

PROJECT RISK MANAGEMENT REGISTER FOR CONTRACT Please fill in the blank columns labelled Response Strategy and Response Action for each Risk Event listed in the table below:									
RISK IDENTIFICATION						QUALITATIVE RISK ASSESSMENT		RISK RESPONSE PLAN	
#	RISK CATEGORY	RISK EVENT	CAUSE	EFFECT	THREAT OR OPPORTUNITY	PROBABILITY	IMPACT	RESPONSE STRATEGY	RESPONSE ACTIONS
1	Safety	Fire outbreaks	Welding	Medium	Threat	Medium	Medium		
2	Construction	Damaging existing service i.e. Electrical cables, water pipes, etc.	Excavation	High	Threat	Medium	High		
3	Safety	Protests / community unrests	Workers / community	High	Threat	Medium	High		

PROJECT RISK MANAGEMENT REGISTER FOR CONTRACT Please fill in the blank columns labelled Response Strategy and Response Action for each Risk Event listed in the table below:									
RISK IDENTIFICATION						QUALITATIVE RISK ASSESSMENT		RISK RESPONSE PLAN	
#	RISK CATEGORY	RISK EVENT	CAUSE	EFFECT	THREAT OR OPPORTUNITY	PROBABILITY	IMPACT	RESPONSE STRATEGY	RESPONSE ACTIONS
4	Finance	Depleted Project funds	Improper cash flow	High	Threat	Medium	High		
5	Site coordination	Other activities around the work area	Commuters	Medium	Threat	Medium	Medium		

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

T2.2.17. PENALTY TABLE

The Bidder is required to acknowledge the penalty table by signing this schedule.

PENALTY TABLES					
DELAYS ON ITEMS ATTRACTING PENALTIES	Value of Contract (Excl VAT.) in millions R				
	<1	≥1<5	≥5<20	≥20<50	≥50
PROGRAMME AND PRELIMINARY DOCUMENTS (Rand's per day delay)	2 000	10 000	20 000	20 000	20 000
DRAWINGS AND DESIGN PACK (Rand's per day delay)	5 000	20 000	30 000	40 000	50 000
SECTIONAL COMPLETION	2% of the value of the outstanding work/ week				
OVERALL COMPLETION	2% of the value of the outstanding work/ week				
COMMISSIONING (Rand's per day delay)	10 000	20 000	30 000	40 000	50 000
REMEDYING OF DEFECTS					
a) Critical to asset functioning/ running (Rand's per day delay)	10 000	50 000	100 000	100 000	100 000
b) Not critical to asset functioning/ running (Rand's per day delay)	1 000	5 000	10 000	10 000	10 000
SHERQ					
a)SHERQ non-conformances, corrective and preventative actions not resolved within the agreed target dates	1 000	5 000	10 000	10 000	10 000
Agreed target dates exceeding 5 working days					
b)Non-reporting of SHERQ incidents and statistics within the required timeframe	1 000	5 000	10 000	10 000	10 000
Within a shift / Within 24 hrs					
c) Repeat SHERQ non conformances	2 000	10 000	20 000	20 000	20 000
During Construction phase	2 000	10 000	20 000	20 000	20 000
SED Implementation					
a. Failure to implement SED objectives (Rands per day delay)	1 000	5 000	10 000	10 000	10 000

Name of Bidder: _____

Signed by or on
behalf of Bidder: _____

Official
Capacity: _____

Date: _____

SECTION B: CONTRACT

PART C1: AGREEMENT AND CONTRACT DATA

C1.1. FORM OF OFFER AND ACCEPTANCE

C1.1.1. LETTER OF BID

LETTER OF BID

DESCRIPTION: TENDER FOR THE CONSTRUCTION OF CHAMBERS ON H37 PIPELINE AT NORTHRIDGE AREA.

BID NO: 10397071/21

TO: The Bid Submission Box
Rand Water Head Office
522 Impala Road
Glenvista
Johannesburg
Attention: Semakaleng Mangoali

We have examined the Conditions of Contract, Specifications, Drawings, Schedules, the attached Appendix and Addenda No.'s for the execution of the above named Works. We offer to execute and complete the Works and remedy any defects therein in conformity with this Bid which includes all said documents, for the total sum of in South **African Rand** (ZAR _____)

(_____)

Amount in Words inclusive of all taxes) or such other sum as may be determined in accordance with the Conditions of Contract.

The total ZAR value quoted above, to include the sum of imported equipment/material sourced directly from outside South Africa. The applicable currency of origin/s must be converted to South African Rand (ZAR) using the closing rate of exchange as published by SARB on the date, one week (7 day calendar days) prior to the closing date for the Bid.

The Bidder shall further complete the offer/letter and stipulate the sum in the currency of origin (i.e. Euro, USD, GBP or any other currency) as noted below.

for the sum of in **Euro** (€ _____)
(_____ **Amount in Words inclusive of all taxes*)**

or such other sum as may be determined in accordance with the Conditions of Contract.

for the sum of in **USD** (\$ _____)
 (_____ **Amount in Words inclusive of all taxes**
 *)

or such other sum as may be determined in accordance with the Conditions of Contract.

for the sum of in **GBP** (£ _____)
 (_____ **Amount in Words inclusive of all taxes**
 *)

or such other sum as may be determined in accordance with the Conditions of Contract.

for the sum of in **any other currency** _____
 (_____ **Amount in Words inclusive of all taxes *)**
 or such other sum as may be determined in accordance with the Conditions of Contract.

***Applies to international suppliers that are registered for all taxes in South Africa**

We accept your suggestions for the appointment of the DAB, as set out in the Appendix to Bid.

We agree to abide by this Bid for a period of 180 days from the Submission Date and Time for Bids and it shall remain binding upon us and may be accepted at any time before that date. We acknowledge that the Appendix forms part of this Letter of Bid.

If this offer is accepted, we will provide the specified Performance Security, commence the Works as soon as is reasonably practicable after the Commencement Date, and complete the Works in accordance with the above-named documents within the Time for Completion.

Unless and until a formal Agreement is prepared and executed this Letter of Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Signature..... in the capacity of.....

duly authorized to sign bids for and on behalf of.....

Address:

Date:.....

Signature of Witness: _____

Signature of Witness: _____

Name of Witness: _____

Name of Witness: _____

Date: _____ Date : _____

C1.1.2. CONTRACT AGREEMENT

This Agreement made on the _____ day of (month) _____ (year) _____
between

RAND WATER

(hereinafter called "the Employer")

And

(hereinafter called "the Contractor").

Whereas the Employer desires that the Works known as TENDER FOR THE CONSTRUCTION OF CHAMBERS ON H37 PIPELINE AT NORTHRIDGE AREA should be executed by the Contractor, and has accepted a bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement:
 - a. The Letter of Award
 - b. The Letter of Bid (incorporating the Appendix to Tender)
 - c. The Conditions of Contract
 - d. The Employer's Requirements
 - e. The Returnable Schedules
 - f. The Contractor's Proposal
 - g. The Bid Addenda (where applicable)
 - h. Additional Information Provided by Contractor (where applicable)

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein, in conformity with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price at the times and in the manner prescribed by the Contract.

Authorised signature of Employer

Authorised signature of Contractor

 for and on behalf of the Employer

 for and on behalf of the Contractor

Name:

Name:

Designation: **CHIEF EXECUTIVE**

Designation:

Date:

Date:

In the presence of the undersigned witnesses:

Name:

Name:

Signature:

Signature:

Date:

Date:

C1.2. CONTRACT DATA

C1.2.1. GENERAL CONDITIONS

The General Conditions of Contract applicable to this Contract are the:
“General Conditions” which form part of the “Conditions of Contract for CONSTRUCTION for Building and Engineering Works Designed by the Employer”

First Edition 1999

As published by the Federation Internationale des Ingenieurs-Conseils (FIDIC)

C1.2.2. PARTICULAR CONDITIONS

The General Conditions shall be amended by the Particular Conditions of Contract as detailed herein.

The following clauses – of the Conditions of Contract for CONSTRUCTION for Building and Engineering Work Designed by the Employer, First Edition 1999, published by the Federation Internationale des Ingenieurs-Conseils (FIDIC) shall be amended as stated below:

1. GENERAL PROVISIONS

1.1 Definitions

1.1.1 The Contract

1.1.1.2 Delete this definition and replace with the following:

“**Contract Agreement**” means the contract agreement referred to in Sub-Clause 1.6 [Contract Agreement].

1.1.2 Parties and Persons

1.1.2.2 Delete this definition and replace with the following:

“**Employer**” means Rand Water which is a body corporate established in terms of Section 83 of the Water Services Act 107 of 1997.

1.1.3 Dates, Tests, Periods and Completion

1.1.3.2 Delete this definition and replace with the following:

“**Commencement Date**” means the date notified under Sub-Clause 8.1 [Commencement of the Works] save where otherwise defined in the Contract Agreement.

1.1.4 Money and Payment

1.1.4.1 Delete this definition and replace with the following: “**Accepted Contract Amount**” means the amount accepted in the Letter of Acceptance, or the amount recorded in the Contract Agreement if there is no Letter of Acceptance, for the execution and completion of the Works and the remedying of any defects.

1.1.4.13 Include this additional sub-clause:

“**Fixed rate items**” mean those items which have been described as “FIXED RATE” i.e. the Bidder should make allowance for variation in quantities that could change price and escalation and unforeseen price increments in materials, labour and machineries. Such rate would not be reviewed for new rates in case of any change in quantity whether up or down and also any fluctuation in price of resources.

1.1.6 Other Definitions

1.1.6.2 Delete this definition and replace with the following:

“**Country**” means the Republic of South Africa.

1.1.6.7 Delete this definition and replace with the following:

“**Site**” means the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered.

1.2 Interpretation

The following is added at the end of this Sub-Clause:

“In these Conditions, provisions including the expression “Cost plus reasonable profit” require this profit to be one-twentieth (5%) of this Cost.”

1.4 Law and Language

Delete this Sub-Clause and replace with the following:

“The Contract shall be governed, construed and interpreted in accordance with the Laws of the Republic of South Africa. The language of the Contract shall be English.”

1.6 Contract Agreement

Delete this Sub-Clause and replace with the following:

“The Contractor shall within a reasonable time after having been called upon to do so, enter into and execute a Contract Agreement.”

1.8 Care and Supply of Documents

Delete the first sentence of the second paragraph of this Sub-Clause and replace with the following:

“Each of the Contractor’s Documents as well as the SHERQ File shall be in the custody and care of the Contractor, unless and until taken over by the Employer.”

1.10 Employer’s Use of Contractor’s Documents

Delete this Sub-Clause and replace with the following:

“For the purposes of this clause, Intellectual Property means statutory and common law proprietary rights in respect of patents, designs, copyright, know how, confidential information, domain names, drawings, data and all other rights in respect of Intellectual Property compiled, created or prepared in execution of the Works to be performed in terms of the Agreement.

As between the Parties, all rights, title and interest and copyright in and to any Intellectual Property, and other intellectual property rights in the Contractor’s documents and other design documents made by (or on

behalf of) the Contractor and in and to any and all documents prepared in connection with the Agreement shall vest in the Employer."

1.12 Confidential Details

The following is added at the end of this Sub-Clause:

"Unless otherwise provided for in the Agreement, and with the exception of those matters set out herein below, the Parties warrant that each shall keep confidential all matters relating to the Works, and that the Parties, their employees, agents and servants shall not divulge or disclose to any organisation or any person any information, data, documents, secrets, dealings, transactions or affairs relating to or incidental to the Works.

The obligation of confidentiality shall not apply to the following:-

- (a) any matter generally available in the public domain otherwise than as a result of a breach of this clause;
- (b) any disclosure which may reasonably be required for the performance of that Party's obligations under the Agreement;
- (c) disclosure of information which is required by statute, regulation or any other law;
- (d) the provision of information to contractors, consultants, sub-contractors or suppliers for purposes of executing the Works, provided that the obligations of confidentiality herein shall be imposed mutatis mutandis upon such contractors, consultants, sub-contractors or suppliers in their respective contracts; and
- (e) the provision of information to any third person with the express written permission of the other Party."

1.13 Compliance with Laws

The following is added at the end of this Sub-Clause:

"The Contractor shall at all times conform in all respects with the provisions of any Act of Parliament, Regulations, Bye-law of any Local or any other Statutory Authority or other Enactment having the force of law which may be applicable to the performance of its obligations under the Contract and shall indemnify, and keep indemnified the Employer, against damages that it may suffer as a result of any breach by the Contractor, its agents or employees, including any hired labour, of any such Act, Regulation, Bye-law or other Enactment and including all legal costs on the attorney and client scale which may be payable as a result of any claims or proceedings in respect of the Contract."

THE FOLLOWING ADDITIONAL SUB-CLAUSES ARE ADDED TO THE END OF CLAUSE 1:

1.15 Whole Contract

"This Contract is the entire agreement between the parties regarding the matters addressed in the Contract. No representation, terms, conditions or warranties not contained in this Contract shall be binding on the parties. No agreement, or addenda, varying, adding to, deleting or cancelling this Contract, including this Sub-Clause, shall be effective unless reduced to writing and signed non-electronically by both parties"

1.16 Non-Waiver

"No grant by either Party to the other of any indulgence, condonation, waiver or allowance shall, in respect of any specific event or circumstance other than that in respect of which the grant was made, constitute a waiver of rights of the grantor in terms of the Contract or an estoppel of the grantor's right to enforce the provisions of the Contract"

2 THE EMPLOYER

2.4 Employer's Financial Arrangements

This Sub-Clause is deleted in its entirety.

3 The Engineer

3.2 Delegation by the Engineer

The following is added at the end of this Sub-Clause:

"The authority to delegate expressly excludes the delegation of powers to vary the Works in terms of Sub-Clause 13.1 [Right to Vary]."

3.3 Instructions of the Engineer

Delete this Sub-Clause and replace with the following:

"The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.

The Contractor shall comply with the instructions given by the Engineer or delegated assistant, on any matter related to the Contract. These instructions shall be given in writing."

Should the Contractor fail within reasonable time to carry out the Engineer's instructions regarding any matter whatsoever on which he is authorized to order and direct the Contractor, then without vitiating the Contract and without prejudice to any other remedy the Employer may have under the Contract, the Employer may, after serving notice of its intention on the Contractor, itself take such action or employ others to take such action on its behalf as the Contractor has failed to take on the Engineer's instructions.

For this purpose, the Employer may use any suitable plant or materials brought on Site by the Contractor. The cost to the Employer of taking action on account of the Contractor's failure to carry out the Engineer's instructions shall be for the Contractor's account and may be recovered from the Contractor by the Employer, but such work shall be valued as if performed by the Contractor in terms of the Contract at Contract rates and included in the payments due to the Contractor.

3.4 Replacement of the Engineer

Delete this Sub-Clause and replace with the following:

"If the Employer intends to replace the Engineer, the Employer shall give notice to the Contractor of the name, address and relevant experience of the intended replacement Engineer."

4 THE CONTRACTOR

4.2 Performance Security

In the second paragraph of this Sub-Clause delete the period of "28 Days" and replace with "14 days".

The following is added at the end of this Sub-Clause:

"Should the Contractor fail to provide the said security within the specified time the Employer, in his sole discretion, may either:-

- (a) Withhold payment from the Contractor until the amount withheld is equal to 5% in value of Accepted Contract Amount, or
- (b) Proceed to issue notice in terms of Clause 15 [Termination by Employer]"

Delete the last paragraph of this Sub-Clause and replace with the following:

The employer shall return the Performance Security to the Contractor within 21 days after receiving a copy of the Taking-Over Certificate.

4.3 Contractor's Representative

The following is added at the end of this Sub-Clause:

"Without derogating from the generality of the foregoing, the Contractor's Representative shall, at the Contractor's cost, implement forthwith any additional safety precautions which the Engineer may consider necessary for the proper protection of the Contractor's employees engaged in the Works. Work to which such additional

precautions will apply shall be suspended pending the implementation of such precautions."

4.8 Safety Procedures

"Without derogating from the generality of the foregoing, the Contractor shall:-

- (a) comply strictly with the Employer's site SHERQ Specifications/Rules, applicable legislation, other requirements and regulations from time to time in force, a copy of which is incorporated into and shall be read as part of the Agreement;
- (b) be responsible for the safety and welfare of all its employees and shall comply with all relevant SHERQ requirements;
- (c) familiarize himself with all the Employer's internal SHERQ systems, regulations, policies and procedures and all legislative or statutory requirements with regard to the health and safety of the Contractor's employees;
- (d) ensure that all his personnel are fully briefed with regards to all relevant policies and safety procedures and that all personnel have attended the requisite inductions;
- (e) ensure that all personnel sign their acceptance of these procedures and regulations – which signed documents are to be kept in a register which is to be made available at all times for inspection;
- (f) at its own cost provide all of its employees with all necessary safety equipment, namely, safety boots, hard hats, overalls etc. and will at all times adhere to the Employer's site rules and regulations, including his subcontractors and their employees, the South African safety regulations in particular, the Occupational Health and Safety Act (No. 85 of 1993) and relevant regulations and their latest revisions;
- (g) be responsible for the discipline of its employees and shall, at the Employer's request remove from the site any incompetent or undesirable employees."

4.9 Quality Assurance

The following is added at the end of this Sub-Clause:

"Without derogating from the generality of the foregoing, the Contractor shall maintain an effective quality management system in accordance with the requirements of ISO 9001 (or equivalent), in order to ensure and demonstrate that the Works and services conform to the specified requirements. A copy of the ISO 9001 Certification Certificate (or equivalent) must be submitted on request.

The Engineer will have the right to visit the manufacturing location for the purpose of audit, surveillance or inspection during the manufacturing of the Materials/Plant to verify the Contractor's quality management.

In the event of the Material/Plant being rejected due to non compliance with the specification, workmanship and/or other valid reasons, then the cost of rectification as well as re-inspection shall be for the account of the Contractor."

4.11 Sufficiency of the Accepted Contract Amount

The following is added at the end of this Sub-Clause:

"Without derogating from the generality of the foregoing, no claim by the Contractor for additional payment will be entertained which is consequent upon any misunderstanding or the allegation, or fact that it was supplied with incorrect information by any person, or its failure to obtain correct information as to any matter affecting its accepted bid or the execution of the Works to be provided, nor will any such misunderstanding, or the obtaining of incorrect information, or the failure to obtain correct information, relieve it from any risk or responsibility for the due fulfilment of its obligations in terms of the Contract."

4.17 Contractor's Equipment

The following is added at the end of this Sub-Clause:

"All Contractor's Equipment shall be subject to and comply with the operational and safety regulations of the Employer and, upon notice by the Engineer, may at all times be inspected by relevant members of the Employer's Personnel for the purposes of ensuring compliance with the aforesaid regulations."

4.18 Protection of the Environment

The following is added at the end of this Sub-Clause:

"The Contractor's attention is directed to Employer's SHEQ Policy a copy of which is incorporated into and shall be read as part of the Agreement.

The Contractor shall comply with all requirements, stipulations and the like of any Environmental Authorisations undertaken and/or issued in respect of the Works."

4.20 Employer's Equipment and Free-Issue Material

The last paragraph of this Sub-Clause is deleted and replaced with the following:

"After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor at which point, except where otherwise stated in the Contract, all risk in such free-issue materials shall also pass to the Contractor and shall remain with the Contractor unless and until the said free-issue materials are returned to the custody and control of the Employer."

4.22 Security of the Site

The following is added at the end of this Sub-Clause:

"Without derogating from the generality of the foregoing the Contractor shall at all times remain responsible for the security of his own Equipment.

In addition the Contractor shall fully acquaint himself and strictly comply with all the Employer's security regulations particularly with regard to personnel, Plant, Material and Equipment entering or leaving the Employer's property. All badging costs shall be borne by the Contractor."

The following additional Sub-Clauses are added to the end of Clause 4:

4.25 Waiver of Contractor's Lien

"The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site. The Contractor shall ensure that it procures similar waivers from its subcontractors."

5 NOMINATED SUBCONTRACTORS

5.2 Objection to Nomination

This Sub-Clause is amended as follows:

- Sub-paragraph Clause (b) is deleted
- Sub-paragraph (c)(ii) is deleted
- Sub-paragraph (c) is re-numbered as "(b)"

Sub-paragraph (c)(i) is re-numbered as "(b)(i)".

6. STAFF AND LABOUR

6.4 Labour Laws

Delete this Sub-Clause and replace with the following:

"Without derogating from the generality of Sub-Clause 1.13 [Compliance with Laws] the Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

The Contractor shall require the Contractor's Personnel to obey all applicable Laws, including those concerning safety at work, and shall indemnify the Employer for the consequences of any failure by the Contractor's Personnel to obey all applicable Laws as aforesaid."

The following should be added at the end of the added sub-clause to address the OHS-ACT requirements.

6.7 Health and Safety

The Contractor warrants that all his and his Subcontractors' workmen are covered in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993, which cover shall remain in force whilst any such workmen is present on the Employer's premises. The Contractor undertakes to ensure that he and/or his Subcontractors and/or their respective employees will at all times comply with all the requirements of the Act and without derogating from this general undertaking, also comply with the following conditions:

- All work performed on the Employer's premises must be performed under the close supervision of the Contractor's employees who are trained to understand the hazards associated with any work that the Contractor performs on the stated premises.
- The Contractor shall assume the responsibility in terms of Section 16(1) of the Act. If the Contractor delegates any duty in terms of Section 16(2) of the Act, a copy of such written delegation shall immediately be forwarded to the Employer.
- The Contractor shall ensure that he familiarizes himself with all the requirements of the Act, and that he, his employees and any Subcontractor comply with them.
- The Contractor shall appoint competent employees who shall be trained on any Occupational Health and Safety aspect pertinent to them or to the work that is to be performed.
- Discipline regarding Occupational Health and Safety shall be strictly enforced.
- Personal Protective Equipment shall be issued as required and worn at all material times.
- Safe work practices shall be enforced and all employees shall be made conversant with the contents of these practices.
- No unsafe equipment/machinery and/or articles shall be used on the site.

All incidents referred to in Section 24 of the Act shall be reported by the Contractor to the Department of Labour as well as to the Employer. The Employer shall further be provided with copies of any written documentation relating to any incident.

- The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Act into any incident involving a Contractor and/or his employees and/or his Subcontractor.
- No use shall be made of any the Employer's machinery/article/substance/personal protective equipment without written approval.
- Work for which the issuing of a permit is required shall not be performed prior to the obtaining of a duly completed and approved permit.
- No alcohol or other intoxicating substance shall be allowed on the site. Anyone suspected to be under the influence of alcohol or any other intoxicating substance shall not be allowed on the site.
- Full participation shall be given if and when the Employer's Personnel inquire into Occupational Health and Safety issues.
- The Contractor expressly agrees to comply with the procedures and arrangements as required by the Act in the execution of the work.
- b) The Contractor confirms that he will report to the Engineer anything that he deems to be unhealthy and/or unsafe, and that he has versed his employees and/or Subcontractor in this regard.
- c) The Contractor warrants that he shall not endanger the health and safety of the Employer's Personnel in any way whilst performing any work on the site.
- d) The Contractor agrees to comply with the requirement to submit a comprehensive safety plan in accordance with the safety

requirements identified by the Employer and other additional items required. Included below is an abbreviated checklist:

- Notification of construction work
- Supervision of construction of work
- Risk assessment
- Structures
- Excavation work
- Material Hoist
- Cranes
- Housekeeping on construction sites
- Fire precautions on construction sites
- Construction welfare facilities.

- e) The Contractor confirms that he will acknowledge and adhere to the Employer's Environmental Management System requirements, as well as co-operate in the following areas:
- f) Full compliance with existing approved standards for performing work, for example, SANS, BS, IEC and IEEE.
- g) The Contractor agrees to comply with emergency response procedures. The Bidder shall be aware of all legislature requirements pertaining to this type of work including amongst others the Occupational Health and Safety Act and Regulations (Act 85 of 1993) OHS Act, Labour Relations Act and construction regulations. SHERQ specifications are attached to this document.

6.10 Records of Contractor's Personnel and Equipment

Without derogating from the generality of the foregoing the Contractor shall, render returns of all persons in their employ on site which returns shall be submitted to the Engineer at the end of each month.

In addition no Statement submitted to the Engineer for payment in terms of Clause 14 will be processed by the Engineer unless such Statement is accompanied by a copy of the monthly labour return referred to above"

The following additional Sub-Clauses are added to the end of Clause 6:

6.12 Key Personnel

"The Contractor shall furnish the Engineer with a list of addresses and telephone numbers of key personnel in the Contractor's organisation who may be contacted in any emergency both during and outside normal Working Hours."

Commencement, Delays and Suspension

8.3 Programme

The penultimate paragraph of this Sub-Clause is deleted and replaced with the following:

"The Contractor shall notify the Engineer in writing of any event, circumstance or factor which may adversely affect the Works or the progress thereof, delay the execution of the Works or increase the Contract Price ("notified event"). Such notice shall be given as soon as possible, but in any event within not more than 7 days after the event, circumstance or factor in question was known or should reasonably have been known to the Contractor. In such notice the Contractor shall provide:

- (a) detailed particulars of the notified event and the potential adverse effects; and
- (b) proposals for the steps to be taken by the Contractor to mitigate the potential adverse effects and meet the Time for Completion.

The Engineer may also require the Contractor to submit a proposal under Sub-Clause 13.3 [Variation Procedure] in respect of any notified event.

A notification in terms of this Sub-Clause shall not constitute a notification of a claim for extension of time or additional cost pursuant to Clause 20 [Claims, Disputes and Arbitration] or otherwise under the Contract.

In the event of the Contractor making a claim for an extension of time or additional cost under Clause 20 the event relied upon shall be assessed as if the Contractor had complied with the 7 day notice period referred to above

8.4 Extension of Time for Completion

This Sub-Clause is amended as follows:

- Sub-paragraph (d) is deleted;
- Sub-Clause (e) is re-numbered as (d)'
- Add the following to the end of the first paragraph of this Sub-Clause:
- "The Contractor shall not however, be entitled to an extension of the Time for Completion to the extent that completion would, in the circumstances, in any event have been delayed by a cause not listed in (a) to (d) above."
- In cases of rainfall delays the rain formula shall be used, as indicated in section T1.4.11.1.

12. MEASUREMENT AND EVALUATION

12.3 Evaluation

This Sub-Clause is amended as follows:

- The percentage in sub-paragraph (a)(i) is amended to 20%
- The percentage in sub-paragraph (a)(ii) is amended to 1.0%
- The percentage in sub-paragraph (a)(iii) is amended to 10.0%

14 CONTRACT PRICE AND PAYMENT

14.3 Application for Interim Payment Certificates

This Sub-Clause is amended as follows:

- Delete the words "end of the month" in the first paragraph and replace with "25th day of each month."
- Add the following at the end of this Sub-Clause:
"In the event that the Contractor fails to submit a Statement by the 25th day of the month any late submission will only be evaluated in the next month."
- Rand Water shall endeavour to make payment within 30 days from date of monthly statement, date of the aforesaid monthly statement should reflect the last day of the month wherein the services being invoiced were rendered.

14.9 Payment of Retention Money

Delete this Sub-Clause and replace with the following:

The two and a percent (2.5%) retention bond/ guarantee cash shall remain in full force until the takeover certificate has been issued for the works.

The remaining two and a half percent (2.5%) retention of money shall be paid promptly after the expiry date of the defects notification period.

16 SUSPENSION AND TERMINATION BY CONTRACTOR

16.1 Contractor's Entitlement to Suspend the Work

The following words are deleted from the first paragraph of this Sub-Clause:

"or the Employer fails to comply with Sub-Clause 2.4 [Employer's Financial Arrangements]"

18 INSURANCE

18.2 Insurance for Works and Contractor's Equipment

Delete the final paragraph of this Sub-Clause and replace with the following:

"The insurance described in the first two paragraphs of this Sub-Clause, namely Works insurance, shall be effected and maintained by the Employer as Insuring Party in accordance with, and to the extent provided in the Employer's construction risks insurance policy.

The insurance described in the third paragraph of this Sub-Clause, namely insurance of the Contractor's Equipment, shall be effected and maintained by the Contractor as Insuring Party.

Notwithstanding anything to the contrary in this Clause 18 [Insurance] (and notwithstanding the definitions and other terms of the Contract), the scope and extent of insurance cover provided by the Employer as the Insuring Party, and the Employer's obligations as the Insuring Party under this Sub-Clause, are subject to the terms of the said policies. Without derogating from the foregoing, the obligations of the Employer as Insuring Party provided for under sub-paragraphs (c), (d) and (e) of this Sub-Clause are specifically subject to the provisions of the said policies.

The Contractor is the Insuring Party for all additional and other insurances under this Sub-Clause, including:

- a. for the Contractor's Equipment,
- b. for Plant and Materials during manufacture or fabrication to the extent not covered by the policies procured by the Employer as the Insuring Party, and
- c. to the extent that the Contractor considers it necessary, for other insurances for risks carried by the Contractor under the Contract (including for the Works, Plant, Materials and/or Contractor's Documents for risks which are not covered, or not sufficiently covered, as the case may be, by the Employer's policy(s)).

18.3 Insurance against injury to Persons and Damage to Property

Delete sub-paragraph (a) and replace with the following:

"shall be effected and maintained by the Employer as Insuring Party to the extent covered by the Employer's insurance policy(s)"

Add the following at the end of this Sub-Clause:

"Notwithstanding anything to the contrary in this Clause 18 [Insurance] (and notwithstanding the definitions and other terms of the Contract), the scope and extent of insurance cover provided by the Employer as the Insuring Party, and the Employer's obligations as the insuring Party under this Sub-Clause are subject to the terms of the said policies. The Contractor is the insuring Party for all additional and other insurances under this Sub-Clause."

20 CLAIM, DISPUTES AND ARBITRATION

20.4 Obtaining Dispute Adjudication Board's Decision

The first paragraph of this Sub-Clause is deleted and replaced with the following:

"If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract, including the validity of the Contract, or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may, within 28 days after such dispute arising, refer the dispute in writing to the DAB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause. The other Party may within 28 days of receiving a submission to the DAB forward a written reply thereto to the DAB for its consideration prior to it issuing its decision, such reply shall be copied to the other Party and the Engineer"

The fifth paragraph of this Sub-Clause is deleted and replaced with the following:

"The DAB may within 7 days of giving its decision correct in any clerical mistake or any patent error arising from any accidental slip or omission made in giving its decision.

If either Party is dissatisfied with the DAB's decision, then either Party may, within 14 days after receiving the decision or any correction thereto, give notice to the other Party of its dissatisfaction. If the DAB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 14 days after this period has expired, give notice to the other Party of its dissatisfaction.

Neither Party shall be entitled to be represented by a practicing and/or admitted lawyer (including but not limited to attorneys, advocates or judges) in any proceedings before the DAB. The proceedings shall be conducted on the papers unless both parties agree that a hearing should be held, or the DAB otherwise directs. Each Party shall bear its own costs in regard to any matter referred to the DAB."

20.5 Amicable Settlement

"Where notice of dissatisfaction has been given under Sub-Clause 20.4 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the twenty-eighth day after the day on which notice of dissatisfaction was given, even if no attempt at amicable settlement has been made."

20.6 Arbitration

The first paragraph of this Sub-Clause is deleted and replaced with the following:

"Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by arbitration. Unless otherwise agreed by both Parties:

- (a) the dispute shall be finally settled under the Rules For The Conduct of Arbitrations as published by the Association of Arbitrators (Southern Africa) in force at the time of commencement of the arbitration,
- (b) the dispute shall be settled by one arbitrator to be appointed by the Chairman of the Association of Arbitrators (Southern Africa),
- (c) the arbitration shall be held in Johannesburg, and
- (d) the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].

For the purpose hereof the term "dispute" shall be interpreted in the widest sense and shall include any dispute or difference in connection with or in respect of the conclusion or existence of the Contract, the carrying into effect of the Contract, the interpretation or application of the provisions of the Contract, the Parties respective rights and/or obligations in terms of and/or arising out of the Contract and/or the validity, enforceability, rectification, termination or cancellation, whether in whole or in part, of the Contract.

The arbitration shall not be construed as a review or appeal of any adjudicator's decision. Resolution of the dispute shall commence anew, as if no adjudication had taken place. The claimant in the adjudication shall be the claimant in the arbitration. The adjudicator's decision, or reasons, shall not be admissible in the arbitration.

Neither Party shall be limited in the proceedings before the arbitrator to the evidence or arguments previously put before the DAB to obtain its decision, or to the reasons for dissatisfaction given in its Notice of dissatisfaction.

Any member of the DAB shall not be eligible for subsequent appointment as the arbitrator nor shall any party have the right to call them as witnesses in the arbitration.

This Sub-Clause shall exist independently of this agreement to the extent necessary to resolve disputes that may arise out of or concerning this agreement, its validity or termination".

21 ADDITIONAL GENERAL PROVISIONS

The following additional provisions are added:

21.1 Tax Invoices

The Contractor shall issue an invoice to the Employer for all amounts to be paid to the Contractor under the Contract.

If VAT is payable on any amount certified by the Employer for payment under the Contract, the Contractor shall ensure that the invoice complies with the requirements of a Tax Invoice under the Value Added

Tax Act no. 89 of 1991 (as amended). No payment shall be made by the Employer on invoices not meeting this requirement and the Employer shall not be liable for interest for such non-payment.

21.2 Employer's Right to Step-in

If the Contractor fails to carry out any obligation under the Contract and fails to make good the failure and remedy it despite being required to do so by the Engineer by notice under Sub-Clause 15.1 [Notice to Correct] (within the specified reasonable time), the Employer, without prejudice to its other rights, powers and remedies under the Contract or in law, shall be entitled to make good the failure and remedy it either himself or via other persons, and the reasonable costs of doing so shall be for the account of the Contractor.

The Contractor shall co-operate with the Employer and facilitate and permit the use of all required Goods, information, materials and other matter (including Contractor's Documents and all other drawings, CAD files, technical data, models, plans, designs, diagrams, evaluations, details, specifications, schedules, reports, calculation results, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the Contractor under the Contract or otherwise for and/or in connection with the Works) and shall generally do all things required by the Engineer to achieve this end.

Any information, materials and other matter made available by the Contractor under this Sub-Clause shall be used solely and exclusively for the purpose of making good and remedying the Contractor's failure and shall thereafter be returned to the Contractor. Any such information, materials and other matter which is made available by the Employer to other persons as contemplated in this Sub-Clause shall be made available strictly in accordance with the foregoing and subject to a confidentiality undertaking *mutatis mutandis* in accordance with the Contractor's confidentiality undertaking under Sub-Clause 1.12 [Confidential Details].

The Employer shall not, and shall procure that such other persons do not (save only to the extent that he or they may be entitled thereto by virtue of any other provision of the Contract), retain any records, copies or reproductions of any such information, materials and/or other matter.

21.3 Limitation of Entitlement where Contractor is culpable

Notwithstanding anything to the contrary, the Contractor shall not be entitled to any extension of time or additional payment or other compensation if and to the extent:

- (a) the cause, event or circumstance giving rise thereto is attributable to the negligence, error or default of the Contractor or any Subcontractor;
- (b) the Contractor fails to take all reasonable steps to mitigate the effects of the cause, event or circumstance giving rise thereto.

21.4 Record and Data Keeping

The Contractor shall maintain all data, records, electronic communications and documentation relating to this Contract and keep full and proper records and accounts in connection with the Works (whether contained in documents or in electronic format), during the execution of the Works and for a period of 5 (five) years after the latest of the expiry dates of the Defects Notification Periods (or the earlier termination of the Contract for any reason whatsoever, as the case may be) and shall ensure that all Subcontractors do likewise.

The Employer's Personnel and the Employer's other authorised representatives and agents shall be entitled to examine, audit, copy and inspect all such books, records, systems, processes, procedures and documents at all reasonable times during the execution of the Works and during the said 5 (five) year period in order to verify compliance by the Contractor with its obligations, and/or to assess any entitlement or claimed entitlement of the Contractor under the Contract.

The Contractor shall provide access to all such books, records, systems, data and documents of the Contractor and to any premises and personnel of the Contractor for this purpose and shall co-operate and render all assistance requested by the Employer's Personnel and the Employer's other authorised representatives and agents.

All data, communications, records and accounts are to be kept in a lockable storeroom and adequately protects against loss which includes, but is not limited to, fire, theft, vermin, etc.

21.5 Damages for the Late Supply of Documentation

If the Contractor fails to provide any of the documents listed in the Appendix to Bid by the dates specified in the Contract the Contractor

shall subject to Sub-Clause 2.5 [*Employer's Claims*] pay damages to the Employer for this default. These damages shall be the sum stated in the Appendix to Bid, which shall be paid for each day which shall elapse between the time the document in question was to have been delivered and when it was actually delivered. These damages shall not relieve the Contractor from his obligations to provide the said document, or to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.

C1.2.3. EMPLOYER'S INSURANCE MANUAL

PRINCIPAL CONTROLLED INSURANCE CLAUSES - FOR USE WITH THE EMPLOYER'S CONTRACTS

PARTICULAR CONDITION 18

18.1 Insurance Effected by the Employer.

18.1.1 Notwithstanding anything elsewhere contained in this 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** the Contractor and where relevant subcontractors the following insurances which are subject to the terms limits exceptions and conditions of the Policy:

- a) **CONTRACT WORKS** Insurance - which will provide cover against accidental physical loss of or damage to the Works including temporary works, Plant and Materials intended to form part of the Permanent Works
- b) **SASRIA SPECIAL RISKS** Insurance - in respect of riot and associated risks of damage to the Works, including temporary works, Plant and Materials intended to form part of the Permanent Works.
- c) **PUBLIC LIABILITY** Insurance - which will provide indemnity against the insured parties legal liability in the event of accidental death of or injury to third party persons and/or accidental loss of or damage to third party property arising directly from the execution of the contract on or about the Site and occurring during the period of insurance with a limit of indemnity of R250,000,000 in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause.

18.1.2 The **Employer** shall pay any premium due in connection with the insurance effected by the **Employer**. All of the aforementioned policies are renewed on an annual basis and are thus applicable for the year they are placed, that is, a 12-month period commencing 01 July and ending 30 June of the ensuing year. In terms of all details contained hereunder, they are thus applicable until 30 June. Policy terms, conditions and deductibles may change on the 01 July depending on the outcome of the renewal. This will thus be the case for every ensuing year of insurance.

18.1.3 The Contractor shall not include any premium charges for this insurance except to the extent that he may deem necessary in his own interests to effect supplementary insurance to the insurance effected by the **Employer**. The **Employer** reserves the right to call for full information regarding insurance costs included by the Contractor.

18.1.4 Any further clarification of the scope of cover provided by the Policies arranged by the **Employer** should be obtained from the **Employer**:

Mr. Bafana Gamede
Tel: 011 682 0362
Fax: 011 682 0765
Email: bgamede@randwater.co.za

OR
Ms. Lerato
Mosweu

Tel: 011 682 0709
Fax: 011 682 0765
Email: mmosweu@randwater.co.za

18.1.5 In the event of any occurrence which is likely to or could give rise to a claim under the insurances arranged by the **Employer** the Contractor shall:

- a) In addition to any statutory requirement or other requirements contained in the Contract immediately notify the **Employer** by telephone and or e-mail giving the circumstances nature and an estimate of the loss or damage or liability.
- b) Complete a Claims Advice Form available from the **Employer** to whom the form must be returned without delay.
- c) Negotiate the settlement of claims with the Insurers through the **Employer's** Insurance Brokers and shall when required to do so obtain the **Employers** approval of such settlement.

The **Employer** and Insurers shall have the right to make all and any enquiries on the site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall co-operate in the carrying out of such enquiries.

18.1.6 The Contractor will be liable for the amount of the Deductible (First Amount Payable) in respect of any claim made by or against the Contractor or Subcontractors under the insurances effected by the **Employer**.

18.1.7 The Contractor will be liable for the amount of the Deductible (First Amount Payable) in respect of any claim made by or against the Contractor or Subcontractors under the insurances effected by the **Employer**.

Insured Contracts

All contracts undertaken by the Insured involving Design, Construction, Testing, Commission in respect of new works, capital expenditure, Upgrade, modification, retrofitting, or alteration and/or additions to existing facilities undertaken by the Insured or other Insured Parties acting on their behalf but excluding.

i) Projects with an estimated period exceeding 36 months (excluding Defects Liability period)

ii) Projects exceeding R500 million at inception

iii) Contracts involving Tunnelling

All Sums Insured inclusive of VAT.

Where more than one Contractor is involved in the same claim the Deductible will be borne in pro-rata amounts by each Contractor in proportion to the extent of each Contractor's admitted claim.

The Deductibles (First Amount Payable) for which the Contractors are responsible and which are applicable in respect of each and every occurrence or series of occurrences attributable to one source or original cause giving rise to loss or damage or liability indemnifiable are as follows:

a) Under the **Contract Works Insurance** in respect of loss or damage

- Wet Risks:
- 10% of the claim with a minimum R10,000 and a maximum of R 500,000
- Maintenance:
- 10% of the claim with a minimum R10,000 and a maximum R500,000
- Other contracts:
- 10% of the claim with a minimum of R10,000 and maximum of R250,000

b) Under the **Sasria** (Special Risks) Insurance:

0.10% of the Contract Value in respect of loss by theft following an insured peril subject to a minimum of R2,500 and a maximum of R25,000

c) Under the Public Liability Insurance

in respect of loss of or damage to property R 25,000

d) Under any other insurances shall be as specified in such insurance policy.

18.1.7 Any amount which becomes payable to the Contractor or any of his Subcontractors as a result of a 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.

In respect of any amount which becomes payable as a result of a claim under any Public Liability Insurances the Contractor or his Subcontractors shall be required to pay the amount of the Deductible to the Insurer to facilitate settlement of such claim.

18.2 Insurance Effected by the Contractor.

18.2.1 Without in any way detracting from any requirements contained elsewhere in this contract the Contractor and Subcontractors shall where applicable provide as a minimum the following:

- a. Insurance of Contractors Equipment (including tools offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the Site for a sum sufficient to provide for their replacement.
- b. Insurance in terms of the provisions of the Social Security Act as may be amended or in terms of any similar Workers Compensation and Unemployment Insurance enactment's in the Contractors' or Sub Contractor's operational, manufacturing or assembly locations.
- c. Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability indemnity.
- d. Where the Contract involves manufacturing and/or fabrication of the Works or parts thereof at premises other than at the Site the Contractor shall satisfy the **Employer** that all Plant and Materials for incorporation in the Works are adequately insured during manufacture and/or fabrication. In the event of the **Employer** having an insurable interest in such Works during manufacture or fabrication then such interest shall be noted by endorsement to the relevant Policies of Insurance.

Special Condition

e. **Only applicable if contracts works involves elements of design**

PROFESSIONAL INDEMNITY Insurance – of not less than R 1 000 000 for a period of insurance commencing on the date of award of the Contract. The Insurance shall include Retroactive cover to the date of Conceptual Design commencement and should be in effect for a period of 12 months after completion of the works.

Notwithstanding the required limit as set out above, "Professional Indemnity" the contractor will be liable for the full amount of the claim arising out of their errors and omission.

18.2.2 The insurances to be provided by the Contractor and his Sub-contractor shall

- a) Be effected with Insurers and on terms approved by the **Employer** – these terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause
- b) Be maintained in force for whatever period the perils to be insured by the Contractor are at risk (including any Defects Notification Period during which the Contractor is responsible for the care of the Works)
- c) Within the respective periods stated in the Appendix to Bid submit to the **Employer** the relevant Policy or Policies of Insurance or evidence acceptable to the Employer that such insurances have been effected.

18.2.3 In the event that the Contractor or his Subcontractor receives any notice of cancellation or restrictive modification to the insurance provided to them they shall immediately notify the **Employer** in writing of such cancellation or restriction and shall advise what action

the Contractor or his Sub-contractor will take to remedy such action.

If the Contractor fails to effect and keep in force the insurances referred to then the **Employer** may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount paid by the **Employer** from any monies due or which may become due to the Contractor or recover same as a debt from the Contractor.

18.3

Subcontractors.

The Contractor shall:

- a) Ensure that all potential and appointed Subcontractors are aware of the whole contents of this clause, and
- b) Enforce the compliance by Subcontractors with this clause where applicable.

APPENDIX

DECLARATION OF INSURANCE

I hereby declare that the Insurances enumerated below have been effected in accordance with Conditions of Contract applicable to **Bid Number: 10394681/21.**

I further declare that all premiums in respect of the insurances are fully paid up to date and that the insurances shall not be amended and/or cancelled without the prior knowledge and consent of the Employer.

Cover Effected	Clause No	Insurer and Policy Number	Expiry Date
a) Contractors Equipment	PC 18.2.1a)		
b COIDA	PC 18.2.1b)		
c) Motor Vehicle Liability	PC 18.2.1c)		
d) Manufacturing/Fabrication Premises	PC 18.2.1d)		
e) Professional Indemnity (Where Applicable)	PC 18.2.1e)		

N.B.: This Declaration of insurance must be completed and signed by

- i) The Contractor and.
- ii) The Insurer or Insurance Broker appointed by the Contractor

and returned to the Employer together with a letter of good standing from the Workman's Compensation Commissioner in respect of Item b) above.

SIGNED:

- i) For and on behalf of the Contractor

.....

Official Capacity:.....

SIGNED:

- ii) For and on behalf of the Insurer / Broker (delete whichever is not applicable)

.....

Official Capacity:.....

PART C2: PRICING DATA

C2.1. PRICING ASSUMPTIONS

1. These Bills of Quantities (C2.2) shall be used to assist both parties in administering and agreeing any changes/variations, which may arise during the course of the Contract.
2. These Bills of Quantities shall be used to calculate the value of work completed in the evaluation of interim/final payments.
3. The Bidder is deemed to have allowed opposite each item contained in these Bills of Quantities whatever costs and charges it may consider necessary for the carrying out, complying with and due observance of the provisions, conditions and requirements set out in the Contract.
4. No claim whatsoever will be entertained in respect of errors or omissions in pricing due to the brevity of a description of any item contained in these Bills of Quantities which items are fully described or can reasonably be inferred when read in conjunction with the relevant clauses provided for in the Conditions of Contract, Specifications, Drawings or other relevant documentation.
5. Any item left un-priced will be deemed to be provided for elsewhere and no claim for any extras arising out of the Bidder's omission to price any item will be entertained.

C2.2. PRICING SCHEDULES / BILLS OF QUANTITIES (BoQ)

The Bidder must refer to **Annexure C2.2: Pricing Schedule / Bill of Quantities (BoQ)** provided with this bid document.

The Bidder is required to submit the following:

- **Excel® format of the completed pricing schedule or BoQ in a compact disc (CD) or USB flash drive.**
- **Printed format and signed version of the completed pricing schedule or BoQ.**

PART C3: SCOPE OF WORK

C3.1. DATES FOR DELIVERY AND COMPLETION

1. It is estimated that the Contract will be placed on or before <insert date> access to undertake work will only become available after the issue of the Site Access Certificate.
2. The Bidder shall state the proposed start and completion dates based on the above approximate date, these dates shall comply with the dates mentioned below in T2.2.1.4
3. The Bidder shall simultaneously fill in the period required to complete the work in days or weeks from the date of acceptance of the offer by the Employer. This shall be used to adjust dates should the Contract placement date vary.
4. All equipment and plant shall be handed over by <insert date> and the Bidder's programme shall comply with this requirement by the Employer.

Item	Start Date	Completion Date	Working Period
PHASE 1: KICKOFF MEETING, SUBMISSION AND APPROVAL OF DOCUMENTS	14 JAN 2022	11 FEB 2022	20 DAYS
PHASE 2: SITE ESTABLISHMENT	14 FEB 2022	18 FEB 2022	5 DAYS
PHASE 3: CONSTRUCTION	21 FEB 2022	13 MAY 2022	10 WEEKS
PHASE 4: COMMISSIONING	16 MAY 2022	20 MAY 2022	5 DAYS
PHASE 5: HANDOVER	23 MAY 2022	27 MAY 2022	5 DAYS

Table C3.1: Dates for delivery and completion

NOTE THAT A DETAILED PROJECT PROGRAMME MUST BE INCLUDED WITH THE BID SUBMISSION

Name of Bidder:

Signed by or on
behalf of Bidder:

Official
Capacity:

Date:

C3.2. SCOPE OF WORK

<Insert Summary obtained from the Procurement Strategy>

The Bidder must refer to **Annexure C3.2: Scope of Work (including drawings, where applicable)** provided with this bid document.

PART C4: SITE INFORMATION

C4. SITE INFORMATION

The work involves the construction of a reinforced valve chamber for the already connected pipework and valves installed. The contractor is however required to supply and weld puddle flanges on the pipes at the wall centre positions of the chambers.

1.1. GENERAL REQUIREMENTS

The Contractor shall, at his/her own cost, maintain the whole of the site in a clean and orderly condition, to the satisfaction of the Engineer. On completion of the work, the Contractor shall tidy up the site to the satisfaction of the Engineer; all temporary structures shall be dismantled and removed; all surplus material, debris etc. shall be carted away and the whole site shall be left in a neat and tidy condition.

1.2. DESCRIPTION OF THE SITE

1.2.1. Site Location

The site is at Northridge area, in Johannesburg, Gauteng.

1.2.2. Site Boundaries

The Contractor shall confine his/her construction activities to within the contractual boundaries of the site. The Contractor shall not extend his/her activities outside the contractual boundaries unless the Engineer has specifically authorized the extension in writing.

1.3. PROTECTION OF THE WORK

The Contractor shall in particular keep the site free of water to allow for dry working conditions – provisions for dealing with water are discussed further in the technical specifications.

1.4. FEATURES REQUIRING SPECIAL ATTENTION

1.4.1. Existing Services and Structures

Care must be taken that the existing pipework, valves, electric cables etc. are not damaged or destroyed during any activity necessary for the execution of the works. Any damage to existing services will be to the contractors account.

1.4.2. Quality Plan

The Contractor will be required to submit a detailed integrated manufacturing and quality plan to the Engineer or Engineer's representative.

The Contractor shall inform the Engineer via e-mail in advance to come out to site for the control points stated in the drawing notes (e.g. inspection of excavations for foundation, inspection of rebar etc.)

The Contractor shall keep a quality control file on site with the quality control plan, all quality control forms and test results and shall present this file to the Engineer at each site inspection. Furthermore, the contractor shall send all relevant site and lab test results (e.g. compaction test results, concrete cube test results etc.) via e-mail to the Engineer as soon as they become available.

2.1. CIVIL SPECIFICATION

The proposed work consists of the Construction of a Reinforced concrete valve chamber in Northridge area. This will also involve excavation, importing suitable material and backfilling. All construction work needs to be according to all applicable listed standard specifications, together with variations contained herein and other Rand Water technical specifications or contract documents.

2.1.1. CIVIL SCOPE

The civil works to be performed by the Contractor will also include, but may not be limited to: (the list below is non-exhaustive and is to be read in conjunction with the project drawings and technical specifications – where omissions are identified the Tendering contractor should notify the Engineer):

2.1.1.1. Provide a construction methodology to be approved by the Engineer

2.1.1.2. Services

Detection and verification existing

Re-route if required or,

Protection of Services as per specifications (RW and SANS)

2.1.1.3. Clearing and Grubbing

2.1.1.4. Fencing

Demarcation around the work site and fencing

2.1.1.5. Site survey and setting out of structures

Benchmarks

Levels verification

Setting out of structures

2.1.1.6. Excavations and Earthworks

Compaction control and other relevant soil testing
Clearing and Grubbing
Removing topsoil
Surveying of site and setting out of structures
Excavating and dewatering
Importing, backfilling and compaction
Disposal of spoil material

2.1.1.7. Concrete Works

Formwork and Scaffolding design
Blinding/No-fines
Structural Concrete

i. Reinforced Concrete Chamber for the Combined Air valve and 3 No. of Sluice Gate Valves (at Northridge Reservoir)

- Provide a construction methodology to be approved by the Engineer;
- Re-routing (if required) and protection of Services;
- Clearing and Grubbing;
- Demarcation around the work site and fencing;
- Removal of the Concrete Palisade fence along the length of the new proposed Reinforced concrete valve chamber and safely put aside for later re-instatement (about 10m length)
- Setting out the benchmarks and levels verification;
- Removal of topsoil and stockpiling for later re-instatement;
- Excavation for the reinforced concrete valve chamber, disposing of spoil material and preparations of layer works;
- Temporary works design and erection, as part of formwork (through tieless formwork);
- Construction of the reinforced concrete valve chamber
- Water tightness testing of the reinforced concrete valve chamber;
- Backfilling and compaction around the reinforced concrete valve chamber;

- Re-instatement of the top soil;
- Installation of steel sundry items
- Re-instatement of the concrete palisade fence;

Reinstatement of structures damaged or relocated during construction to their preconstruction condition/location and making good of site;

ii. Precast Concrete Air Valve Chamber

- Provide a construction methodology to be approved by the Engineer;
- Re-routing (if required) and protection of Services;
- Clearing and Grubbing;
- Demarcation around the work site and fencing;
- Setting out the benchmarks and levels verification;
- Removal of topsoil and stockpiling for later re-instatement;
- Excavation for the precast air valve chamber, disposing of spoil material and preparations of layer works;
- Construction of the precast concrete air valve chamber with a cast in-situ base
- Backfilling and compaction around the reinforced concrete valve chamber;
- Re-instatement of the top soil;
- Installation of steel sundry items
- Reinstatement of structures damaged or relocated during construction to their preconstruction condition/location and making good of site;

iii. Precast Concrete Scour Valve Chamber

- Provide a construction methodology to be approved by the Engineer;
- Re-routing (if required) and protection of Services;
- Clearing and Grubbing;
- Demarcation around the work site and fencing;
- Setting out the benchmarks and levels verification;
- Removal of topsoil and stockpiling for later re-instatement;
- Installation of a pipe from the scour chamber to the existing municipal Manhole

- Excavation for the precast scour valve chamber, disposing of spoil material and preparations of layer works;
- Construction of the precast concrete scour valve chamber with a cast in-situ base
- Backfilling and compaction around the reinforced concrete valve chamber;
- Re-instatement of the top soil;
- Installation of steel sundry items
- Reinstatement of structures damaged or relocated during construction to their preconstruction condition/location and making good of site;

2.1.1.8. Structural Steel Works

2.1.1.9. Mechanical and Pipeline Scope of Work

The Mechanical scope of work (SOW) comprises of installation of a Scour valve and an Air valves.

i. Scour Valve – 1 x 300mm (dia.)

- Draining of water inside the pipeline.
- Installation of a Scour Valve.

ii. Air Valve - 1 x 200mm (dia.)

- Installation of Air Valves.

2.1.1.10. Marked Up Construction Drawings (“Red Line”)

2.1.1.11. The rectification of defects during the “Defects Liability Period”

The proposed solution is to install 1 x Scour and 1 x Air Valve and associated chambers along the pipeline to increase the scouring capacity.

2.1.2. APPLICABLE STANDARDISED SPECIFICATIONS (CIVIL)

Although not bound in or issued with this document, the following SANS 1200 Standardized Specification for Civil Engineering Construction as approved by the Council of the South African Bureau of Standards shall apply to this Contract. The Contractor shall be in possession of these Standardized Specifications and their related SANS 10120 Code of Practice which apply equally and shall keep a copy of each on site for reference by him and the Engineer for the duration of the Contract. The Contractor shall also be in possession of any other Standardized Specification which is not listed below which may be relevant to the works.

For "Workmen's Compensation Act" read "Compensation for Occupational Injuries and Diseases Act, 1993 (Act No.130 of 1993)" wherever it appears. For "Machinery and Occupational Safety Act" and "Mines and Works Act" read "Occupational Health and Safety Act, 1993 (Act 85 of 1993)" wherever they appear.

For "maintenance period" read "Defects Notification Period" in terms of Clause 11.1 and 11.3 of the Conditions of Contract for Construction (FIDIC Red Book 1999).

SPECIFICATION		DESCRIPTION
SANS 1200	A	GENERAL
SANS 1200	C	SITE CLEARANCE
SANS 1200	D	EARTHWORKS
SANS 1200	G	CONCRETE (STRUCTURAL)
SANS 1200	H	STRUCTURAL STEELWORK
SANS 1200	HC	CORROSION PROTECTION OF STRUCTURAL STEELWORK

Copies of SANS 1200 Standardized Specifications are available from the South African Bureau of Standards, Private Bag X191, Pretoria, 0001.

2.1.3. LIST OF DRAWINGS (CIVIL)

The following drawings form part of the Tender Document and are separately issued as a "Book of Drawings". These drawings are for tender purposes only. A set of construction drawings will be issued to the contractor on the commencement date.

DRAWING NO.		DRAWING TITLE
<u>Civil</u>		
R0 39662/001		General Arrangement for the DN600, DN450 Sluice Gate Valve and Air Valve chamber 1 of 4
R0 39662/002		General Arrangement for the DN600, DN450 Sluice Gate Valve and Air Valve chamber 2 of 4
R0 39662/003		General Arrangement for the 200mm Air Valve along H37 pipeline 3 of 4
R0 39662/004		General Arrangement for the 300 dia scour valve chamber 4 of 4
<u>Pipelines</u>		
RA 21570		General Arrangement for the 200mm dia Air Valve chamber

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2.1.4. VARIATIONS AND ADDITIONS TO STANDARDISED SPECIFICATIONS (CIVIL)

The following variations and additions to the SANS 1200 Standardized Specifications will apply to this contract:

GENERAL – SANS 1200 A

A 1 SCOPE

REPLACE THE CONTENTS OF SUBCLAUSE 1.1, INCLUDING THE NOTES, WITH THE FOLLOWING:

"1.1 This specification covers requirements, principles and responsibilities of a general nature which are generally applicable to civil engineering construction and building works contracts, as well as the requirements for the Contractor's establishment on the Site."

A 2 INTERPRETATIONS

A 2.3 DEFINITIONS

REPLACE THE OPENING PHRASE WITH: "For the purpose of this specification the definitions given in the FIDIC Conditions of Contract and the following definitions shall apply".

ADD THE FOLLOWING OPENING PHRASE TO THE SUBCLAUSE

"Not Applicable to Technical Specification Document. Payment and Measurement clauses are in compliance with the Commercial Specification Document applicable to this project"

(a) General

ADD THE FOLLOWING DEFINITIONS:

"General Conditions" and "Conditions of Contract" : The FIDIC Conditions of Contract specified for use with this Contract, together with the Special Conditions of Contract as applicable.

"Specified": As specified in the Standardised Specifications, the Drawings or the Project Specifications. "Specifications" shall have the corresponding meaning.

(c) Measurement and payment

DELETE AND REPLACE THE DEFINITIONS FOR "Fixed charge", "Time-related charge" AND "Value-related charge" WITH THE FOLLOWING:

"Fixed charge': A charge that is not subject to adjustment on account of variations in the value of the Contract Price or the time allowed in the Contract for the completion of the work.

Time-related charge': A charge, the amount of which varies in accordance with the Time for Completion of the Works, adjusted in accordance with the provisions of the Contract.

Value-related charge: A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract."

A 3 MATERIALS

A 3.1 QUALITY

ADD THE FOLLOWING AT THE END OF SUBCLAUSE 3.1:

"Unless otherwise specified, directed or approved, all materials and workmanship on Works shall comply with the appropriate SANS Specification or Code-and shall bear the official mark of the appropriate standard.

All materials, shall, except where otherwise specified, be new and of the best quality and shall be suitable to withstand and to operate satisfactorily under all possible climatic and weather conditions which can reasonably be expected at the Site.

Alternative materials or equipment proposed by the Contractor shall be tested. The test, as well as the materials or equipment, shall be approved by the Engineer prior to any such materials or equipment being built into the Works and all costs involved in testing shall be deemed to be included in the rates tendered. An Agreement Certificate shall be issued for all non-standard material for the Engineers approval.

All Storage, handling, transport, erection or installation of plant, equipment and materials shall be carried out in accordance with the supplier's or manufacturer's instructions, provided that the Engineer may vary such instructions should they deem such variations necessary. Where supplier's or manufacturer's instructions are in conflict with the Specifications, the requirements of the Specifications shall apply unless otherwise agreed to by the Engineer. Any such conflict shall be brought to the Engineer's notice by the Contractor.

In order to facilitate identification and to avoid confusion with materials supplied under other Contracts it is essential that all materials delivered to site under this Contract be marked with the correct contract and item number".

ADD THE FOLLOWING SUB-CLAUSES TO SUBCLAUSE 3:

A 3.3 ORDERING OF MATERIALS

"The quantities set out in the Schedule of Quantities have been carefully determined from calculations based on data available at the time of its compilation but are to be considered as approximate quantities only. Before ordering materials of any kind the Contractor shall be solely responsible for determining, from the drawings issued or approved by the Engineer for construction purposes, the actual quantities of materials required for the execution of the Works. No liability or responsibility

whatsoever shall be attached to the client or the Engineer in respect of materials ordered by the Contractor except when ordered in accordance with the written information issued by the Engineer."

A 3.4 **APPLICABLE CEMENT SPECIFICATIONS**

All SANS standard cement specifications (latest amendment) are applicable to this project. Thus any references to the withdrawn SANS specifications should be read as the new SANS cement specifications.

A 3.5 **MATERIALS SUPPLIED BY THE CLIENT**

Materials designated in the Contract documents to be supplied by the client shall not be obtained by the Contractor from any other source other than from the client. Requisitions for materials to be supplied by the client shall be submitted beforehand by the Contractor in writing and shall be signed by the Contractor or its authorised representative and countersigned by the Engineer.

The Contractor or its authorised representative shall, upon delivery of all such materials, sign a receipt therefore and having been accepted by the Contractor, such materials will, except only for such defects and deficiencies as may have been recorded by the Contractor in writing on the said receipt, be deemed to be in a sound and satisfactory condition and will thenceforth be deemed to be its sole responsibility, as if such materials had been supplied by the Contractor itself.

The onus shall be entirely on the Contractor to ensure that he accepts only sound materials from the client, and notwithstanding the supply of materials by the client, the Engineer is authorised to reject as unsuitable any such material on the Site of the Works which, in his opinion, is unsound, defective or in any way not in compliance with the specifications. The Contractor shall immediately remove such rejected materials from the Site of the Works and shall replace them at its own expense, with new and sound materials which are in accordance with the Specifications to the satisfaction of the Engineer.

In the event of any circumstances arising which necessitate the replacement of any materials which were supplied by the client, the Contractor shall, unless otherwise instructed in writing by the Engineer, obtain such replacement materials only from the client. In such circumstances, the Contractor shall be liable to and pay to the client, all costs incurred by the client in supplying such replacement materials, irrespective of whether the Contractor could have obtained the said replacement materials from another source at a lesser cost than from the client;

Provided always that the Contractor will not be held liable for the costs of the replacement by the client of unsound materials which were not accepted by the Contractor as aforesaid."

A 4 **PLANT**

A 4.1 **SILENCING OF PLANT**

REPLACE THE CONTENTS OF SUBCLAUSE 4.1 WITH THE FOLLOWING:

"The Contractor's attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Mine Health and Safety Act (Act 29 of 1996) as amended and the Occupational Health and Safety Act (Act No. 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other Plant which would otherwise cause a noise level in excess of that specified in the said regulations.

Where appropriate, the Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations."

A 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

ADD THE FOLLOWING PARAGRAPH BEFORE THE EXISTING FIRST PARAGRAPH IN SUBCLAUSE 4.2:

"The Contractor's buildings, sheds and other facilities erected or utilised on the Site for the purposes of the Contract shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. as may be required by the Contractor. The facilities shall always be kept in a neat and orderly condition."

IN THE SECOND PARAGRAPH OF SUBCLAUSE 4.2 AND ADD THE FOLLOWING:

"The Contractor shall provide on the Site and in close proximity to the actual locations where the work is being executed, one toilet per 10 workmen, which toilets shall be effectively screened from public view and their use enforced. Such toilets shall be relocated from time to time as the location of the work being executed changes, so as to ensure that easy access to the toilets is maintained. The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets will only be allowed where temporary facilities have to be provided. The contractor shall obtain the Engineers approval on the positioning of such facilities before erection."

The Contractor shall, where applicable, make all necessary arrangements and pay for the daily emptying of the ablution facilities (each morning before use or at any other time as directed by the Engineer)."

A 4.3 RESTRICTION ON EMPLOYEE ACCOMMODATION

ADD THE FOLLOWING SUBCLAUSE 4.3:

"No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

With the exception of a night watchman no employees may be housed or accommodated or allowed to sleep over on the Site of the Works".

A 5 CONSTRUCTION

A 5.1 SURVEY

A 5.1.2 Preservation and Replacement of Survey Beacons and Pegs Subject to the Land Survey Act

REPLACE THE SECOND SENTENCE OF SUBCLAUSE 5.1.2 WITH:

“Before the commencement of construction work, the Contractor, in consultation and liaison with the Engineer, shall search for plot pegs where boundaries have not been established by the erection of walls or fences (e.g. between two adjacent undeveloped erven or on an undeveloped corner erf) and the Contractor shall compile a list of such pegs that are apparently in their correct positions”.

A 5.3 PROTECTION OF EXISTING STRUCTURES

*REPLACE: “Machinery and Occupational Safety Act, 1983, (Act No. 6 of 1983)”
WITH:*

“Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), as amended,” *AND REPLACE* “Mines and Works, 1956 (Act No. 27 of 1956)” *WITH* “Mine Health and Safety Act, 1996 (Act No. 29 of 1996), as amended”.

A 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

REPLACE THE HEADING AND THE CONTENTS OF SUBCLAUSE 5.4 WITH THE FOLLOWING:

“A 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

A 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent Contractor and/or the Engineer to be present on, under, over or within the Site.

Without in any way limiting its liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Engineer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where it intends to work. Neither the client nor the Engineer offer any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of Site and the provision and utilisation of suitable detecting and testing equipment.

Thereafter, the Contractor shall, by the use of appropriate methodologies carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of Sub-clauses 4.4 and 5.1.2.2 of SANS 1200D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'Known Services' and their positions shall be indicated by the Contractor on a separate set of Drawings, a copy of which shall be furnished to the Engineer without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the Site, it shall henceforth be deemed to be a Known Service and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the Site shall apply. The Contractor shall notify the Engineer immediately any such service is encountered or discovered on the Site.

Whilst it is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to:

- (a) Known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognisance being taken of such deviations in line and level which may reasonably be anticipated ; and
- (b) any other service which ought reasonably to have been a Known Service in accordance with the provisions of this clause;

as well as for consequential damage, whether caused directly by the Contractor's operations or by the lack of proper protection;

Provided always that the Contractor will not be held liable in respect of damages occurring to services not being known services.

No separate payment will be made to the Contractor in respect of its costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer, the Drawings as aforesaid and these costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor's in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided therefore in the respective sections of the Specifications pertaining to the type of work involved.

A 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all Known Services during the period which the Contractor has occupation and/or possession of the Site

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising there from for the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

A 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service, or instruct the Contractor to make such arrangements himself.

Should damage occur to any existing services, the Contractor shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor – unless written direction is given by the Engineer.

The client will accept no liability for damages due to a delay in having alterations or repairs effected by the respective service owners. The Contractor shall provide all reasonable opportunity, access and assistance to persons carrying out alterations or repairs of existing services."

A 5.5 DEALING WITH WATER

ADD THE FOLLOWING TO THIS CLAUSE:

"The Contractor's attention is drawn to the fact that in some areas the natural ground level of the works may be through water courses, or that a high water table may be encountered in excavations for structures below ground level. In the uncompleted condition during construction, structures below ground level may therefore become buoyant due to the inflow of storm water or groundwater. The Contractor shall take the necessary steps as described in the first paragraph of clause 5.5 to protect the works.

The Engineer may take or order the Contractor to take additional precautions where he is not satisfied with the Contractor's arrangements. The Contractor shall not be relieved of his/her responsibility by reason of the Engineer taking or ordering additional precautions, or by reason of the engineer failing to do so. All expenditure incurred by Rand Water in taking any additional precautions or otherwise in remedying the default of the Contractor and making good of the Works shall be recovered from the moneys due to the Contractor.

The Contractor will be held responsible for damage caused by storm water and groundwater during construction and he shall ensure that the situation is monitored during weekends and holidays."

A 5.7 SAFETY

REPLACE THE CONTENTS OF SUBCLAUSE 5.7 WITH THE FOLLOWING:

"Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor's obligations hereunder, the Contractor shall at its own expense (except only where specific provision (if any) is made in the Contract for the reimbursement to the Contractor in respect of particular items) :

- (a) Provide to its Employees on the Site of the Works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Mine Health and Safety Act (Act No 29 of 1996) as amended and the Occupational Health and Safety Act (Act No 85 of 1993) as amended and regulations of the stated Acts, at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times; and
- (b) Provide, install and maintain on all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the Site, as well as the general public ; and
- (c) Implement on the Site of the Works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Acts stated in (a) at all times ; and
- (d) Implement all necessary measures as to ensure compliance of the Acts stated in (a) by all subcontractors engaged by the Contractor and their employees engaged on the Works; and
- (e) Comply fully with all other requirements pertaining to safety as may be specified in the Contract.

The client and the Engineer shall be entitled, although not obliged, to make such inspections on the Site as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirements of the Acts stated in A 5.7 (a). For this purpose, the Contractor shall grant full access to the Site of all parts of the Site and shall co-operate fully in such inspections and shall make available for inspection, all such documents and records as the client and/or the Engineer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Engineer's attention that the Contractor is in any way in breach of the requirements of the Acts stated in A 5.7 (a) or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of the Conditions of Contract, be entitled to suspend progress on the Works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the client for extension of time and/or additional costs if the progress on the Works or any part thereof is suspended by the Engineer in terms of this clause and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due date for Completion in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Acts stated in A 5.7 (a) and/or this clause shall constitute grounds for the Engineer to act in terms of the Condition of Contract and for the client to cancel the Contract."

A 5.8 GROUND AND ACCESS TO WORKS

ADD THE FOLLOWING TO SUBCLAUSE 5.8:

“On completion of operations, the Contractor shall restore the ground surface, wherever it may have been disturbed, to its original condition by filling ruts with material similar to the material within the rut and levelling the ground and, where necessary, plant grass and shrubs as may be required by the EMP (Environmental Management Plan) or as directed by the Engineer. Reinstatement operations to be done at the Contractor’s expense.”

ADD THE FOLLOWING SUBCLAUSE TO CLAUSE 5:

“A 5.9 SITE MEETINGS

The Contractor or its authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the Contractor’s offices on the Site. At such weekly meetings, matters such as general progress on the Works, quality of work, problems, claims, payments, and safety etc, shall be discussed, but not matters concerning the day-to-day running of the Contract.”

A 6 TOLERANCES

A 6.2 DEGREES OF ACCURACY

ADD THE FOLLOWING SUBCLAUSE AS THE FIRST SENTENCE OF SUBCLAUSE 6.2:

“Unless otherwise indicated, the Contractor shall construct the Works to a minimum of Degree II Accuracy.”

ADD THE FOLLOWING SUBCLAUSE TO CLAUSE 6:

“A 6.4 USE OF TOLERANCES

No guarantee is given that the full specified tolerances will be available independently of each other, and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified, or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorised' dimensions.

If the work is constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the calculation of quantities will be based on the

'authorised' dimensions, regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

A 7 TESTING

A 7.1 PRINCIPLES

A 7.1.2 Standard of Finished Work Not to Specification

INSERT THE WORDS "or checks by an approved laboratory ..." AFTER THE WORDS "Where the Engineer's checks ..." IN THE FIRST LINE OF SUBCLAUSE 7.1.2.

A 7.2 APPROVED LABORATORIES

REPLACE THE CONTENTS OF SUB-CLAUSE 7.2 WITH THE FOLLOWING:

"Unless otherwise specified in the relevant specification or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out :

- (a) any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract ;
- (b) any testing laboratory owned, managed or operated by the client or by the Engineer ;
- (c) any testing laboratory established and operated on the Site by or on behalf of the client or the Engineer.
- (d) any testing laboratory approved by the Engineer."

A 8 MEASUREMENT AND PAYMENT

A 8.1 MEASUREMENT

A 8.1.1 Method of Measurement, All Sections of the Schedule

DELETE THE WORDS: "and South West Africa".

A 8.1.2 Preliminary And General Item Or Section

A 8.1.2.1 Contents

REPLACE THE LAST SENTENCE OF SUBCLAUSE 8.1.2.1(b) WITH THE FOLLOWING:

“Separate items will be scheduled to cover the Fixed, Value-related and Time-related components of the Contractor’s Preliminary and General costs.”

AND REPLACE THE WORDS “substantial completion” IN SUBCLAUSE 8.1.2.1(c) WITH “Certificate of Completion”.

A 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS

A 8.3.2 Establishment of facilities on the site

A 8.3.2.1 Facilities for the Engineer

DELETE SUBCLAUSE 8.3.2.1(b)

ADD SUBCLAUSE 8.3.2.1(d)

“(d) Carports (state number) Unit: Sum

The rate tendered shall cover all costs as specified in sub-clause 8.3.2.3 of SANS 1200 A and 5.5 of SANS 1200 AB to provide these facilities as specified in Clauses AB-3.1, 3.2, 3.3 and 4.2.”

A 8.3.2.2 Facilities for Contractor

For this contract the sub-items of sub-clause 8.3.2.2 are consolidated into one item and the facilities for the Contractor will not be measured and paid for separately as itemised in sub-clause 8.3.2.2. Payment under item A-8.3.2.2 shall therefore be deemed to cover sub-items (a) to (j).

A 8.3.2.4 Features Requiring Special Attention

ADD THE FOLLOWING SUBCLAUSE 8.3.2.4:

“Features requiring special attention listed in the Project Specification shall be individually listed in the Schedule of Quantities for the Convenience of the Contractor’s pricing. In general the unit will be Sum and the Contractor shall price the item to include all labour, transport, material and installation costs required to achieve the specified objective. Should an item not be covered by this payment item, then the Contractor shall allow for these items under sub-clause 8.3.3.

ADD THE FOLLOWING SUBCLAUSE 8.3.5:

“A 8.3.5 Provision for Health and Safety Measures.....Unit: Sum

The rate tendered shall cover all costs pertaining to the requirements of all Health and Safety specifications, regulations and standards pertaining to the contracted works.”

“A 8.3.6 Provision for As-builts.....Unit: Sum

The rate tendered shall cover all costs pertaining to the provision of as-builts drawings for the contracted works.”

A 8.4 SCHEDULED TIME-RELATED ITEMS

A 8.4.2 Operation and maintenance of facilities on site

A 8.4.2.1 Facilities for Engineer

DELETE SUBCLAUSE 8.4.2.1(b)

ADD THE FOLLOWING SUBCLAUSE 8.3.2.4:

“(e) Carports Unit: Sum

(f) Survey instruments Unit: Sum

The rates tendered shall cover all costs as specified in sub-clause 8.4.2.3 of SANS 1200 A and 5.5 of SANS 1200 AB to operate and maintain these facilities as specified in Clauses AB-3.1, 3.2, 3.3 and 4.2.”

A 8.4.2.2 Facilities for Contractor

Consolidate sub-items (a) to (j) of clause 8.4.2.2 into one item as in A-8.3.2.2. Payment under item A-8.4.2.2 shall be deemed to cover sub-items (a) to (j).

“A 8.4.2.4 Features Requiring Special Attention (Additional Payment Item)

ADD THE FOLLOWING SUBCLAUSE 8.3.2.4:

Features requiring special attention listed in the Project Specification shall be individually listed in the Schedule of Quantities for the Convenience of the Contractor’s pricing. In general the unit will be Sum and the Contractor shall price the item to include all labour, transport, material and installation costs required to achieve the specified objective. Should an item not be covered by this payment item, then the Contractor shall allow for these items under sub-clause 8.3.3.”

A 8.5 **SUMS STATED PROVISIONALLY BY THE ENGINEER**

REPLACE THE CONTENTS OF SUBCLAUSE 8.5 WITH THE FOLLOWING:

"A 8.5.1 **Works Executed by the Contractor**

The Contractor will be reimbursed in substitution of the Provisional Sums (if any) allowed in the Schedule of Quantities for work to be executed by the Contractor, in the amounts determined in accordance with the provisions of the Conditions of Contract.

(a) Description of Item to which Provisional Sum Applies Unit: Prov Sum

(b) Charge Required by Contractor on Sub-item (a) above Unit: %

Sub-items (a) and (b) will be provided in the Schedule of Quantities for each different item to which a Provisional Sum applies.

The Contractor shall be reimbursed under sub-item(s) (a) in substitution of the respective Provisional Sums included in the Contract, the actual price(s) paid or payable by him in respect of the goods, materials or services supplied, but excluding any charges for the Contractor's labour, profit, carriage, establishment or other charges related to such goods, services or materials.

The Contractor shall be paid under sub-item (b), the respective percentage, as stated by the Contractor in its Tender, of the amount certified by the Engineer for payment under the related sub-item (a). The percentages tendered by the Contractor for each respective sub-item (b) included in the Schedule of Quantities shall be deemed to be full and final compensation to the Contractor in respect of any charge by the Contractor for labour, carriage profit, establishment and for any other charges related to the goods, services or materials supplied under the related sub-item (a).

If the Contractor have omitted in its Tender to insert a tendered percentage under sub-item (b), or tendered a zero percentage, the Contractor's tendered rate for sub-item (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under sub-item (b)."

A 8.5.2 **Works Executed by Nominated Subcontractors**

(a) Work to be executed by a Nominated Subcontractor Unit: Prov Sum

(b) Overheads, charges and profit on item (a) above Unit: % or Sum

Sub-items (a) and (b) will be provided in the Schedule of Quantities for each different Nominated Subcontract included in the Contract.

The Contractor shall be reimbursed under sub-item (a), in substitution of the respective Provisional Sums (if any) allowed in the Schedule of Quantities, the amounts actually paid or payable by the Contractor to the respective Nominated Subcontractors, in accordance with the provisions of the Conditions of Contract.



A 8.6 PRIME COST ITEMS

"A 8.6 PRIME COST SUMS

- If the Contractor have omitted in its Tender to insert a tendered percentage under sub-item (b), or tendered a zero percentage, the Contractor's tendered rate for sub-item (b) shall be deemed to be zero and the Contractor shall not be entitled to any payment under sub-item (b)."

A 8.7 DAYWORKS

Day work rates for labour and plant are, however, requested in Schedule of Quantities – Schedule 1A for the purpose of valuation of extra work.”

A 8.8 TEMPORARY WORKS

A 8.8.3 Protection of Buildings and Structures until Construction in Vicinity is complete

ADD THE FOLLOWING DESCRIPTION TO SUBCLAUSE 8.8.3:

"The Contractor shall pay particular care of existing buildings, structures and services during construction. Any damage to buildings or structures, caused by the contractor during construction shall be immediately repaired at the Contractor's cost."

A 8.9 LAND SURVEYOR TO CHECK SETTING OUT..... Unit: Sum

The tendered sum shall include full compensation for all costs incurred to check the setting out of the Works by a Land Surveyor. The certificate certifying the correctness of the setting out must be issued by the contractor to the Engineer for approval before commencing with the Works. Payment for this item shall only be made upon completion of the Works and after the receipt of a certificate from a Registered Land Surveyor.

SITE CLEARANCE – SANS 1200 C

C 3 MATERIALS

C 3.1 DISPOSAL OF MATERIAL

REPLACE THE PROVISIONS OF THE FIRST PARAGRAPH OF SUBCLAUSE 3.1 WITH THE FOLLOWING:

"The Contractor shall identify and utilize approved (licensed) dumping sites for the disposal of material and all transport costs shall be included in the rates tendered for site clearance. No material shall be burnt on site."

C 5 CONSTRUCTION

C 5.2 CUTTING OF TREES

C 5.2.3 Preservation of trees

C 5.2.3.2 Individual trees

REPLACE THE LAST SENTENCE WITH THE FOLLOWING:

"An amount of R 20 000 will be deducted from moneys due to the Contractor as a penalty for every tree that is damaged or removed unnecessarily."

C 5.5 RECLEARING OF VEGETATION

ADD THE FOLLOWING:

"When areas have to be re-cleared on the written instructions of the Engineer, such re-clearing shall be carried out at the Contractor's own cost and the Contractor is therefore advised not to clear the areas prior to the commencement date as set out in the construction programme (in line with the Conditions of Contract)."

C 8 MEASUREMENT AND PAYMENT

C 8.2 PAYMENT

C 8.2.1 Clear and grub

The unit can also be square metre (m²).

EARTHWORKS – SANS 1200 D

D 2 INTERPRETATIONS

D 2.1 SUPPORTING SPECIFICATIONS

REPLACE SUB-CLAUSE 2.1.2 WITH THE FOLLOWING:

"D 2.1.2: Any of the other SANS 1200 Specifications may form part of the Contract Documents."

D 2.3 DEFINITIONS

REPLACE THE WORD AND THE DEFINITION FOR "Borrow" WITH THE FOLLOWING:

"Borrow material: Material, other than material obtained from excavations required for the Works, obtained from sources such as borrow pits or the authorised widening of excavations. 'Borrow' shall have a corresponding meaning."

REPLACE THE DEFINITION FOR "Specified density" WITH THE FOLLOWING:

"Specified density: The specified dry density expressed as a percentage of modified AASHTO dry density."

ADD THE FOLLOWING DEFINITION FOR "Stockpile" UNDER THE EXISTING DEFINITION:

"Stockpile (verb): The process of selecting and, when necessary, loading, transporting and off-loading material in a designated area for later use for a specific purpose."

ADD THE FOLLOWING DEFINITIONS:

"Commercial Source: A source of material provided by the Contractor, not by the client, and including any borrow pit, provided by the Contractor.

Fill: An embankment or terrace constructed of material obtained from excavations or borrow pits. In roads it includes the earthworks up to the underside of the selected sub grade level.

Fill (material): Material used for the construction of an embankment or terrace.

Roadbed: The natural in situ material on which the fill, or in the absence of fill, the pavement layers, are constructed."

D 3 MATERIALS

D 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

D 3.1.1 Method of Classifying

DELETE SUB-CLAUSES (b), (d) AND (e) (ON BOTH D3.1.1 AND D3.1.2):

Excavation shall therefore either be classed as soft excavation or hard rock excavation.

REDEFINE SUB-CLAUSES (a) AS:

(a) Soft Excavation

For bulk excavation and earth moving, soft excavation shall be excavation in all material that can be efficiently ripped by a bulldozer of mass 35t, fitted with a single-tine ripper suitable for heavy ripping and of a flywheel power of approximately 220 kW.

For restricted and general excavation, soft excavation shall be material that can be excavated by a back-acting excavator with a flywheel power exceeding 0.1 kW per millimetre of tined-bucket width or material that requires pneumatic equipment without blasting to be removed.

For this contract boulder excavation will not be measured. Boulders of such a size that they cannot be removed without drilling, wedging and splitting, or other mechanical means, shall be measured individually and will be regarded as hard rock excavation and added to the hard rock quantity.

D-3.3 SELECTION

D-3.3.1 General

ADD THE FOLLOWING:

"Notwithstanding the requirements of Sub-Clause 3.3 of SANS 1200 D, Sub-clause 3.7 of SANS 1200 DB and Sub-clause 3.4.1 of SANS 1200 LB regarding the use of selective methods of excavating, excavated material, suitable for backfill, bedding or other special purpose shall be selectively excavated, temporarily stockpiled in such a way that material suitable for bedding or other special purpose, shall be kept separately from unsuitable or general fill material. The Contractor shall avoid the use of plant, which could cause the burying or contamination of material.

The material selectively excavated and stockpiled shall be placed at a position within the site, selected not to interfere with construction progress and to not interfere with the operational requirements of the Rand Water station. The rate tendered for excavation will include for selective excavation, temporary stockpiling and any other costs related to the activity."

D 3.3.2 Material Suitable for Backfill or Fill Against Structures

ADD THE FOLLOWING TO THE CONTENTS OF SUB-CLAUSE 3.3.2:

"Material used for backfill behind structures shall generally be the material excavated, the material should be tested for suitability subject to the following conditions:

- (a) The material shall be in compliance with the minimum prescripts of the geotechnical report recommendations
- (b) The material shall be in compliance with the minimum prescripts of the design requirements for backfilling around structures

ADD THE FOLLOWING SUB-CLAUSE:

"D 3.3.3 Selection in Borrow Pits and Excavations

Approval of a borrow area for a certain purpose does not necessarily mean that all the material in that area is suitable for the specified purpose. What it does mean is that the borrow area contains some suitable material. The onus shall rest on the Contractor to ensure that only material that is indeed suitable is removed and used for the specified purpose.

When the Contractor has to select excavated material for a specific purpose, the above provisions relating to borrow areas shall apply mutatis mutandis to excavations.

The Contractor shall not waste or contaminate material that has been selected for a specific purpose."

D 4 PLANT

D 4.4 DETECTORS

REPLACE THE CONTENTS OF SUBCLAUSE 4.4 WITH THE FOLLOWING:

"The Contractor shall, for the purposes of detecting and locating underground services in accordance with the provisions of Sub-clause 5.4 of SANS 1200 A and Sub-clause 5.1.2 of SANS 1200 D, at its own cost, provide and use detecting equipment which is suitable for the detection of underground cables, pipes and any other underground infrastructure."

D 5 CONSTRUCTION

D 5.1 PRECAUTIONS

D 5.1.1 Safety

D 5.1.1.1 Barricading and Lighting

REPLACE "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" WITH "Mine Health and Safety Act, 1996, (Act 29 of 1996) and Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

D 5.1.1.2 Safeguarding of Excavations

REPLACE "Machinery and Occupational Safety Act" WITH "Mine Health and Safety Act, 1996 (Act 29 of 1996) and Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

D 5.1.1.3 Explosives

REPLACE THE CONTENTS OF THIS SUB-CLAUSE WITH THE FOLLOWING:

"Where blasting works may be required, the Contractor is required to undertake a Blasting Study as per the Civil Technical Specifications. The Blasting Study should then be submitted to the Engineer for review and Approval where blasting may be

anticipated. Where the use of explosives and blasting has been approved by the Engineer the operations shall be subject to the following conditions:

- (a) The Engineer may prohibit the use of explosives in cases where, in his opinion, the risk of injury to persons or damage to property or to adjoining structures is too high. Such action by the Engineer does not entitle the Contractor to additional payment for having to resort to less economical methods of construction.
- (b) The Engineer's prior written approval shall be obtained for each and every blasting operation. This approval may be withheld if the Contractor does not use explosives responsibly and carefully.
- (c) The Contractor shall comply fully with the requirements of the Explosives Act, Act 83 of 1997 and all other legislation and regulations as may be applicable to blasting and the use of explosives.
- (d) Before blasting is undertaken, the Contractor shall satisfy the Engineer that he has established whether or not the insurers concerned require pre- and post-blasting inspections of buildings and structures within a certain radius of the proposed blasting.

Should such inspections be required, the Contractor shall, together with the Engineer and the insurer, examine and measure the buildings, or structures in the vicinity of the proposed blasting site and establish and record, together with the owner and the client, the extent of any existing cracking or damage before the commencement of blasting operations.

- (e) When there is a possibility of damage to power and telephone lines or any other services or property, the Contractor shall adapt his method of blasting and the size of the charges and shall use adequate protective measures (e.g. cover-blasting), to reduce the risk of damage.
- (f) All accidents, injury to persons and animals and damage to property shall be reported to the Engineer in detail and in writing as soon as is practicable.
- (g) The Engineer shall be given 24 hours' notice by the Contractor before each blasting operation is carried out.
- (h) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good, at his own expense, any additional excavation necessitated by the shattering of rock in excess of any "over break" allowances specified in the Project Specifications or given on any drawing.
- (i) The Contractor to note that there is existing structures in the vicinity of the blasting.

Notwithstanding the Contractor's compliance with the above provisions, the Contractor shall remain liable for any injury to persons and animals and loss of or damage to property occurring as a result of blasting operations.

Further to the above the Contractor shall indemnify Rand Water of any loss or injury incurred by the Contractor's operations as per the provisions of the Conditions of Contract"



D 5.1.2 Existing Services

REPLACE THE CONTENTS OF SUBCLAUSE 5.1.2.2 WITH THE FOLLOWING:

"The exposure by the Contractor of underground services, as required in terms of Sub-clause 5.4 of SANS 1200 A (as amended) shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Engineer.

Disturbed layerworks are to be reinstated as found.

Unless otherwise instructed or agreed by the Engineer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted (in layers of thickness not exceeding 150mm) to the following densities (it remains the Contractor's onus to ascertain the adequacy of the recommendations below for the intended use):

- (a) In roadways : 90% Mod AASHTO density; and
- (b) In all other areas : 93% Mod AASHTO density.

Where hand excavations to expose underground services have to be carried out in roadways, the Contractor shall reinstate the road layer works in accordance with the provisions of Sub-clause 5.9 of SANS 1200DB.

Payment in respect of the exposing of the services by means of hand excavation as described above, will be made in accordance with Sub-clause D 8.3.8.1 (as amended).

Payment in respect of the reinstatement of layer works in road ways will be made in accordance with Sub-clause 8.3.6.1 of SANS 1200DB.”

D 5.1.2.3 Protection of cables

REPLACE SUBCLAUSE 5.1.2.3 WITH THE FOLLOWING:

“5.1.2.3 Protection During Construction

Further to the requirements of Sub-clause 5.4.2 of SANS 1200A (as amended), major excavating equipment and other Plant shall not be operated within 3m (or as may be instructed otherwise by the Engineer) close to known services. Where necessary, excavation in close proximity to Known Services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a Known Service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of Sub-clause 5.4.2 of SANS 1200A (as amended), immediately notify the Engineer thereof and implement such measures as will prevent damage of such

service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring.

Where a service is damaged during the course of discovery repairs to the service are to be carried out as per the provisions of 5.4.3 of SANS 1200 A (notwithstanding the requirements of the Conditions of Contract)"

D 5.1.2.4 Negligence

DELETE SUBCLAUSE 5.1.2.4.

D 5.1.3 Storm Water and Groundwater

ADD THE FOLLOWING:

"The Contractor shall, where applicable and at the earliest practicable opportunity, install the permanent drainage specified or shown on the Drawings and shall at his own cost provide the temporary drainage required to protect the Works."

D 5.1.5 Reinstatement and Maintenance of Roads

ADD THE FOLLOWING:

"Where crossings have been made, the roads shall be reinstated in accordance with the details specified in Sub-clause 5.9 of SANS 1200DB."

D 5.1.6 Road Traffic Control

DELETE THE SECOND SENTENCE OF SUBCLAUSE 5.1.6.

D 5.2 METHODS AND PROCEDURES

D 5.2.2 Excavation

D 5.2.2.1 Excavation for General Earthworks and for Structures

ADD THE FOLLOWING TO PARAGRAPH (b):

"The general area on which the structures will be founded shall be excavated to the levels indicated on the drawings. Thereafter excavations for pipes, footings etc. shall be made to at least the depths shown on the drawings."

ADD THE FOLLOWING TO PARAGRAPH (b):

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. In general, payment will be made for excavating a working width of 1000 mm for the substructure, but the Contractor may excavate a greater working width at no additional cost to the client."

REPLACE THE FIRST SENTENCE OF PARAGRAPH (e) WITH THE FOLLOWING:

"Where excavations have been carried below the authorised levels, the Contractor shall either backfill such excavations to the correct level with approved gravel compacted to 95% of modified AASHTO density or to the density of the surrounding material, whichever is the higher density (>100mm).

Where excavations for structures have been carried out in hard material, the Engineer may direct that over-excavation be backfilled with weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall re-trim the excavations if necessary and, unless other remedial measures are agreed to by the Engineer, shall cast the concrete for the structure, including the additional concrete that may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

D 5.2.2.3 Disposal

REPLACE THE SUBCLAUSE WITH:

Technical specification on disposal of unsuitable material shall be found under item C3.1 of variations to Standard Specifications.

ADD THE FOLLOWING SUBCLAUSE IN SUBCLAUSE 5.2.2:

"D 5.2.2.4 Selection and Stockpiling

Approval or designation of the material in a particular borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the particular purpose for which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or source, discard the spoil and reserve material which may be suitable for other purposes as necessary.

The Contractor shall organise and carry out its operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Engineer's opinion, unsuitable for use in embankments or backfill as a result of contamination, shall be disposed (as defined in section C 3.1 of these specifications) of in a manner acceptable to the Engineer and shall be replaced by the Contractor with materials acceptable to the Engineer, all at the Contractor's cost.

When required, or when ordered by the Engineer, material shall be stockpiled for later use.

D 5.2.5 Transport for Earthworks

REPLACE THE CONTENTS OF SUB-CLAUSE 5.2.5 WITH THE FOLLOWING:

"The transport of all excavated and/or imported materials, irrespective of the distance and source, shall be deemed to be "free haul", the cost of which is included in the

Contractor's tendered rates and prices for the excavation and/or importation of the materials. No separate compensation shall apply for the transportation of excavated and/or imported materials."

ADD THE FOLLOWING SUBCLAUSES:

"D 5.2.6 Inspection of excavations

All foundations for structures shall be inspected by the Engineer and/or an Engineering Geologist or Geotechnical Engineer before any backfilling with material or concrete of any kind is commenced. The Engineer shall be given at least two days' notice by the Contractor for the necessary arrangements to be made."

D 5.2.7 In-place treatment and compaction of material

Where ordered by the Engineer, suitable in-situ material shall be scarified or ripped to the required depth and watered and compacted to the specified modified AASHTO density.

Where additional material has to be imported to achieve the required levels and layer thicknesses, the in-situ material shall be ripped and scarified, the imported material shall be placed and mixed with the ripped material and watered and compacted to the full designated depth of the layer to the specified modified AASHTO density.

D 5.2.8 Weathered or broken rock

Any rock that is found to be weathered shall be removed down to solid rock. Should the quantity of this weathered rock exceed 10m³, then the Engineer shall be requested to evaluate the options. The removed weathered material will be measured as soft excavation.

A similar process shall be followed for rock that is broken through blasting. All pieces of rock that are no longer connected to the parent rock shall be removed."

D 7 TESTING

D 7.2 TAKING AND TESTING OF SAMPLES

REPLACE THE CONTENTS OF THIS SUB-CLAUSE WITH THE FOLLOWING:

"The Contractor shall arrange with the approved independent laboratory engaged by the Contractor in terms of the Civil Technical Specifications, to carry out tests at a frequency agreed upon (in writing) between it and the Engineer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the Specifications and shall submit the results of these tests to the Engineer in a form approved by him."

D 8 MEASUREMENT AND PAYMENT

D 8.1 BASIC PRINCIPLES

REPLACE SUBCLAUSE 8.1.3 WITH THE FOLLOWING:

"Excavation will be measured 2m to inside formwork of basement wall and no allowance will be made in the excavation quantities for extra working space. The contractor shall include for extra working space in rates tendered."

D 8.3 **SCHEDULED ITEMS**

D 8.3.2 **Bulk Excavation**

ADD TO FOLLOWING OPENING PHRASE TO THIS SUBCLAUSE:

"Where 'Hard Rock Excavation' is to be undertaken the tendered rate for this item shall also include complete cost of undertaking a Blasting Study as per the Civil Technical Specifications of this project"

ADD THE FOLLOWING TO THE END OF THE SUBCLAUSE:

"The tendered rate for this item shall also include any temporary stockpiling required on the site where the material cannot be used immediately, maintenance of the stockpile and subsequent re-loading of material."

D 8.3.3 **Restricted excavation**

ADD TO FOLLOWING OPENING PHRASE TO THIS SUBCLAUSE:

"Where 'Hard Rock Excavation' is to be undertaken the tendered rate for this item shall also include complete cost of undertaking a Blasting Study as per the Civil Technical Specifications of this project"

REPLACE THE WORDS "in 1 m increments" AT THE END OF THE FIRST SENTENCE OF SUB-ITEM (a) WITH "in the increments indicated in the Schedule of Quantities".

REPLACE "in 5.2.2.1 – 5.2.2.3 (inclusive)" AT THE END OF SUB-CLAUSE (a) WITH "in Sub-clauses 5.2.2.1 to 5.2.2.5 (inclusive)".

ADD THE FOLLOWING SUB-SUB-ITEM:

"(c) Extra over sub item 8.3.3 (a) for hand excavation

Unit: m³

This item shall apply to hand excavation ordered by the Engineer or when the Engineer considers that, owing to circumstances, excavation by mechanical excavators is not practicable. It shall not apply to hand excavation for trimming or finishing an excavation made by mechanical means.

The tendered rate shall include full compensation for the additional cost of excavating by means of hand tools."

D 8.3.6 **Overhaul**

DELETE SUB-CLAUSE 8.3.6.

D 8.3.8 Existing services

D 8.3.8.1 Location

REPLACE ITEM 8.3.8.1 WITH THE FOLLOWING:

"8.3.8.1 Hand Excavation for Locating and Exposing Existing Services:

- (a) In roadways Unit: m³
- (b) In all other areas Unit: m³

The unit of measurement shall be the cubic metre of material excavated, measured in place according to the authorised or actual dimensions of the excavation, whichever is the lesser.

The tendered rates shall cover the cost of excavating in all materials by means of hand tools within authorised dimensions and at locations approved by the Engineer in accordance with the requirements of Sub-clause A 5.4.1, for all precautionary measures necessary to protect the services from damage during excavation and backfilling, and for subsequent backfilling and compacting. Compaction of material in all areas except in roadways shall be to 90% of the modified AASHTO density.

The tendered rate for hand excavation in roadways shall include compensation for compacting excavated or selected backfill material to 93% of modified AASHTO density. Reinstating layer works and surfacing shall be measured and paid for in terms of SANS 1200DB.

The tendered rates shall also include for keeping excavations safe, for dealing with surface and subsurface water, for removing surplus excavated material from the Site, for transporting all material and for supplying adequate supervision during both excavation and backfilling operations."

D 8.3.10 Top soiling

REPLACE THE CONTENTS OF THIS ITEM WITH THE FOLLOWING:

"The unit of measurement shall be the square metre and the quantity shall be calculated from the authorised dimensions.

The tendered rate shall include loading of the topsoil from stockpiles, transporting it for the free-haul distance, and off-loading, spreading, shaping and lightly compacting the topsoil."

ADD THE FOLLOWING ITEMS IN SUB-CLAUSE 8.3:

“D 8.3.14 Protection of embankment slopes

D 8.3.14.1 Timber poles and pegs..... Unit: m²

The unit of measurement shall be the square metre and the quantity shall be calculated from the authorised dimensions.

The rate shall include all costs for the procurement, supply and delivery to site and for the installation of the timber poles and pegs as per Engineer's drawings, and shall also include all labour, material and equipment required for the installation.

D 8.3.14.2 Geotextile Unit: m²

The unit of measurement shall be the square metre and the quantity shall be calculated from the authorised dimensions.

The rate shall include all costs for the procurement, supply and delivery to site and for the installation of the geotextile as per manufacturers' instructions, and shall also include all labour, material and equipment required for the installation.

D 8.3.1 Miscellaneous

This clause covers all the miscellaneous items not specified in SANS 1200 D. The unit of measurement is No, m, m², m³ or Sum, as indicated in the schedule of quantities. The tendered rate for each component shall cover the cost of labour, materials, plant and incidentals necessary to install the complete item as specified in the Schedule of Quantities and as detailed on the standard drawings.”

D 8.3.16 Soil Testing..... Unit: No.

CONCRETE (STRUCTURAL) – SANS 1200 G

G 3 MATERIALS

G 3.2 CEMENT

G 3.2.1 Applicable Specifications

The standard cement specifications SANS 471, SANS 626, SANS 831 and SANS 1466 have been withdrawn and are replaced by the new SANS ENV 197-1 and -2: Common cements, and SANS ENV 413-1 and -2: Masonry cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

G 3.2.3 Storage of cement

ADD THE FOLLOWING:

“Cement shall not be kept in storage for longer than 10 weeks.”

G 3.4 AGGREGATES

ADD THE FOLLOWING TO THIS SUBCLAUSE:

G 3.4.1 Applicable Specifications

“The aggregates shall comply with the requirements of SANS 1083.

Aggregates to be used in this contract shall be tested to determine whether they are potentially alkali-reactive. If they are alkali-reactive, they shall be replaced with aggregates that are non-reactive.

The content of chloride ion in the aggregates shall be determined and shall be within the limits specified in SANS 1083. Test results in this regard shall be submitted to the Engineer.

At tender stage the Contractor shall assure himself by means of tests and test mixes by an accredited laboratory that the fine and coarse aggregates that he intends to use comply with the specification. The tendered rates shall therefore be deemed to allow for the importation of aggregates, if necessary, that do comply with the Specification.

The Contractor will be responsible for locating the sources of all aggregates.”

G 3.4.2 Use of Plums

DELETE THIS ITEM, as the use of Plums will not be permitted.

G 3.4.3 Storage of aggregates

ADD THE FOLLOWING SUBCLAUSE:

“(c) It is advisable that all aggregate stockpiles be shaded from the sun by means of 80% shade netting.”

The Contractor shall ensure adequate drainage of the coarse aggregate stockpile.”

G 3.5 ADMIXTURES

G-3.5.2 Air-entraining Agents

Air-entraining agents shall not be used.

G 4 PLANT

G 4.5 FORMWORK**G 4.5.1 Design**

ADD THE FOLLOWING:

“Formwork for all classes of finish shall be made of steel panels. Small approved laminated wooden board inserts to steel framed panels may only be used in confined places and the use thereof will be subject to approval by the Engineer. The panels shall be free from rust, ridges, fins, bulges, imperfections, irregularities, chips and holes. The concrete surface shall be smooth and free from irregularities, bulges, ridges, imperfections, air bubbles, honeycomb or surface discolorations. Grout checks shall be used at all construction joints and chamfers at all corners.

Joints between panels shall be sealed tightly to prevent local honeycombing or leaching of concrete. Joints between panels shall form straight horizontal and vertical lines which shall be spaced evenly on the formed concrete surface, and shall be even and smooth and require minimal or no finishing. The layout of all formwork panels and construction joints shall be discussed with the Engineer before application and shall be approved in writing prior to erection of formwork.”

G 4.5.2 Finish

REPLACE THIS CLAUSE WITH THE FOLLOWING:

“Unless otherwise noted, formwork for in situ concrete shall be in accordance with the following classifications:

rough - where not exposed or is to be plastered

smooth - where exposed”

G 5 CONSTRUCTION**G 5.1 REINFORCEMENT****G 5.1.3 Cover**

IN SUBCLAUSE 5.1.3(a) AMEND THE WORDS “ ... or stirrup” TO READ: “bar, secondary reinforcement, tie stirrup, tying-wire knots or wire ends.”

REPLACE TABLE 1 IN SUBCLAUSE 5.1.3 WITH THE FOLLOWING:

“Concrete cover requirements to be as per the minimum prescripts of SANS 10100-2”

ADD TO SUBCLAUSE 5.1.3:

“The cover blocks for water-retaining structures shall be manufactured from concrete of grade, durability, density and impermeability at least equal to that specified for the respective elements except that 12 mm stone instead of 19 mm stone shall be used. The size of the cover blocks shall be 60 mm x 60 mm, with a

thickness equal to the specified cover. Wires shall be cast into the blocks to enable them to be fixed to the reinforcement. The wires shall be fully galvanised Class A as per SANS 675 - 1997. The wires shall be carefully held in position while the concrete is setting to ensure that all the wires are inserted to a uniform and consistent depth of 50 % of the thickness of the cover block for all the cover blocks. The concrete shall be thoroughly compacted by means of a vibrator or vibratory table and the blocks shall be protected against early drying and shrinkage due to sun and wind, by being kept continually wet while still in the mould. After the blocks have been removed from the mould they shall be kept in water continuously until being used, and this period shall not be less than 14 days.

A proper mix design for concrete in cover blocks shall be submitted to the Engineer for approval.

Tying wire shall not encroach on the specified minimum cover by more than a single strand thickness."

G 5.1.4 Splicing

Splice lengths of reinforcement for water-retaining structures shall not be less than 60 diameters and in non-water-retaining structures not less than 50 diameters. Where applicable in water-retaining structures, splices shall be staggered so that they are evenly spread throughout the structure."

G 5.2 FORMWORK

G 5.2.1 Classification of Finishes

ADD TO SUBCLAUSE 5.2.1 (c):

(i) Finish on blinding layers underneath floor slabs

Where a leakage detection and drainage system is specified the blinding layer to be provided shall have a wood-floated finish. The no-fines layer to be placed on the blinding layer shall have a wood-floated finish, and the cement/sand screed on top of the no-fines concrete layer shall have a steel-floated finish.

(ii) Top of wall footings and floor slabs

The top of the wall footings and the floor slabs shall have a steel-floated or power-floated finish.

(iii) Top of walkways

The top of walkways shall have a wood-floated finish.

(iv) Top of walls

The top of walls shall have a steel-floated finish except where they form part of walkways, in which case they shall have a wood-floated finish.

(v) Visible corners

All visible corners shall have a 20 mm x 20 mm chamfer."

G 5.4 **PIPES AND CONDUITS**

ADD THE FOLLOWING:

"The approval of the Engineer for the position of all services to be embedded, including those shown on the drawings, shall be obtained before concrete placement commences. The clear space between pipes of any kind embedded in reinforced concrete and the clear space between such pipes and reinforcement shall not at any point be less than:

a) 40 mm or,

b) 5 mm plus the maximum size of coarse aggregate, whichever is the greater."

G 5.5 **CONCRETE**

G 5.5.1 **Quality**

G 5.5.1.5 **Durability**

"The exposure condition for concrete shall be assumed severe. The maximum ratio of water to cementitious material shall be 0,5."

G 5.5.1.6 **Prescribed Mix Concrete**

DELETE SUBCLAUSE 5.5.1.6.

ADD THE FOLLOWING SUBCLAUSES:

G 5.5.2 **Batching**

G 5.5.2.2 **Water**

ADD THE FOLLOWING:

"The accuracy of the measurement of water shall be within 2% of the quantity required."

G 5.5.2.3 **Aggregate**

THIS SUBCLAUSE IS AMENDED TO INCLUDE:

"Volume batching will not be permitted. Batching by mass shall be within an accuracy of 5% of the mass required."

G 5.5.3 **Mixing**

G 5.5.3.2 **Ready-Mixed Concrete**

ADD THE FOLLOWING:

"The use of ready-mixed concrete for this contract shall be permitted provided that it complies with the requirements of this specification. Test results obtained by such a production facility shall not be regarded as part of the quality control system, and the Contractor shall take his own samples of concrete on site and have them tested in accordance with clause 7 of SANS 1200 G, Clause G-7.1.2. as well as the Civil Technical Specification"

G 5.5.5

Placing

ADD THE FOLLOWING TO SUBCLAUSE 5.5.5.1:

"The Contractor shall give the Engineer at least 48 hours' notice of his intention to cast concrete unless stated otherwise in the Contract."

ADD THE FOLLOWING TO SUBCLAUSE 5.5.5.5:

"Concrete for structures shall not be allowed to fall freely through a height of more than 2,4 m. This implies that walls/columns in these structures may not be cast in lifts of more than 2,4 m in height."

ADD THE FOLLOWING TO SUBCLAUSE 5.5.5.9:

"The pumping of concrete will be permitted."

G 5.5.7

Construction Joints

REPLACE THE FIRST SENTENCE OF SUBCLAUSE 5.5.7.3 WITH:

"The method adopted for forming joints not covered by 5.5.7.1 and unforeseen joints, as specified in clause 2.4.3 of SANS 1200G for non-water-retaining structures, shall be one of sub clauses (a) to (d)."

G 5.5.8

Curing and Protection

SUBCLAUSE G5.5.8. SHALL BE AMENDED TO INCLUDE THE FOLLOWING:

"(c) Irrigation type mist spraying system

The irrigation type mist spraying system shall be controlled by an automatic timer with the capacity to activate the system for any chosen time period at any chosen time intervals, such that curing will be continuous over week-ends, public holidays and builders' holidays. Sprayers shall be spaced at such intervals as to ensure that the whole area of concrete is wetted. The design of the system shall be submitted to the Engineer for his perusal. Should the existing water pressure on site be insufficient, a pump should be installed to operate the mist spraying system. The Contractor shall allow therefore in his tendered rates and prices.

(d) Plastic sheets and tubes

Plastic sheets and tubes used for curing shall be waterproof and may not be torn or be otherwise discontinuous. It shall be white or light-coloured. Black or other dark coloured plastic sheets will not be allowed under any circumstances. Sheets and tubes shall be held down or fixed securely to the elements being cured and joints in sheets shall be taped to prevent loss of moisture from the concrete. Care shall be exercised to prevent staining of exposed concrete.

(e) Determination of intervals and duration of application of water

The duration of water application and the intervals of application will be determined on site by the Engineer, and shall be such as to prevent the concrete from drying out. The duration and intervals shall be adjusted to allow for adverse conditions such as high temperatures and/or dry, windy conditions.

(f) Duration of curing

The curing period shall be at least 10 days.

(g) General

Notwithstanding the preceding specifications, the Contractor shall also ensure that the concrete shall not be exposed to thermal shocks during the first 28 days after casting and he shall take the necessary, additional precautionary measures to shield the concrete with plastic sheets or hessian during extreme warm, cold, dry or windy weather conditions. Hessian shall be wetted should the conditions necessitate this.

Curing shall be done in such a manner as not to cause staining, contamination or marring of the surface of the concrete.

The Contractor shall take the necessary precautions to prevent water used for curing from penetrating the soil underneath or adjacent to the structures. The water shall be drained away effectively as soon as possible to prevent any ponding.

(h) Curing Compounds

Curing compounds will not be an acceptable method of curing for water retaining structures. For other general concrete, curing compounds shall comply with ASTM-C309-74. The surfaces on which they may be used and the types and brands applied shall be approved by the Engineer.

In general, curing compounds shall be Class B/Type 2 (i.e. Resin based and white pigmented). However, where surface staining is not acceptable Class B/Type 1-D curing compounds (i.e. resin based and clear with fugitive dye) may be used, but only after approval of a test panel of the applied compound.

Under no circumstances will curing compounds be approved for use on concrete surfaces which are to receive finishes."

G 5.5.9 Adverse weather conditions

REPLACE THE FIRST SENTENCE OF SUBCLAUSE 5.5.9.2 WITH:

“The temperature of the concrete when deposited shall not be allowed to exceed 25 °C.”

G 5.5.10 Concrete Surfaces

G 5.5.10.2 Wood-floated Finish

ADD THE FOLLOWING:

“Wood-floated surfaces shall first be given a finish as specified in Sub-clause 5.5.10.1 of SANS 1200 G and, after the concrete has hardened sufficiently, the screeded surface shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screed marks.”

G 5.5.10.2 Steel-floated Finish

ADD THE FOLLOWING:

“Steel-floated surface shall be treated as specified for a wood float finish except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screeded surface shall be steel-trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.”

G 5.5.10.2 Power-floated Finish

ADD THE FOLLOWING:

“Power-floated surfaces shall be treated as specified for a wood float finish, except that the screeded surface shall be power-floated to produce a high quality dense, smooth, uniform surface free from trowel marks.”

G 5.5.11 Grouting

ADD THE FOLLOWING:

“Grouting to underpinning and under structural steelwork and bearing plates is to be carried out in 1:2 cement: sand (sand to be graded and selected to approval) mortar and mixed as dry as possible, sufficient water being added to make the mortar only damp. The grout is to attain a minimum compressive stress of 14 MPa within seven days of mixing and at least the strength of the connecting concrete at 28 days.

Alternatively an approved proprietary brand of non-shrink grout used strictly in accordance with the manufacturer’s instructions may be used.

All grouting must be well tamped to provide a solid and homogeneous bed or packing.

Grouting may only be commenced when all work has been thoroughly cleaned and is free of all dust, mortar, etc. In the case of all bearing plates or structural steelwork, the structure must be properly levelled to approval before grouting is undertaken.”

G 5.5.12 Defects

ADD THE FOLLOWING TO SUBCLAUSE 5.5.14.1:

“All repair materials shall be equivalent to concrete in respect of thermal properties and structural elasticity. Such repairs will only be allowed after the defects were inspected by the Engineer and his written approval has been obtained.”

G 6 TOLERANCES

G 7 TESTS

G 7.1 FACILITIES AND FREQUENCY OF TESTING

G 7.1.2 Frequency of sampling

REPLACE THE SECOND PARAGRAPH OF SUBCLAUSE 7.1.2.1 WITH:

“The sets of samples shall be taken in accordance with SANS 5861 as close as is practicable to the start of placing and at appropriate intervals after that, or from one particular batch and then from subsequent batches chosen at appropriate intervals.”

G 7.2 TESTING

G 7.2.1 General

ADD THE FOLLOWING:

“The Contractor shall allow in his tendered rates for all the costs for quality or process control testing.”

G 7.2.4 Early-strengths Testing

ADD THE FOLLOWING:

“Of each sample of three cubes, one cube shall be tested at seven days and the remaining two cubes at 28 days, unless instructed otherwise by the Engineer.”

G 8 MEASUREMENT AND PAYMENT

G 8.1 MEASUREMENT AND RATES

G 8.1.2 Reinforcement

REPLACE SUBPARAGRAPH (a) OF SUBCLAUSE 8.1.2.2 WITH THE FOLLOWING:

"The mass of steel bars will be measured as the total mass of steel irrespective of diameter"

DELETE THE WORDS "...of nominal size 25 mm" IN THE FIRST LINE OF SUBPARAGRAPH (a).

G 8.1.3 Concrete

ADD THE FOLLOWING TO SUBCLAUSE 8.1.3.1:

"No allowance will be made for concrete required to make up over break in rock material and to make up over excavation in material other than rock."

ADD THE FOLLOWING SUB ITEM (e):

"(e) The cost of sand broomed into no-fines blinding shall be included in the rate for no-fines blinding."

ADD THE FOLLOWING SUBCLAUSE 8.1.4:

"G 8.1.4 Casting in of pipes and specials

No separate items will be scheduled for building in items supplied under this contract except for those specially measured in the Schedule of Quantities. The relevant rates for supply and installation shall cover the cost for casting in of the items supplied under this contract irrespective of whether the items are positioned prior to construction or subsequently placed in blocked-out holes."

G 8.4 SCHEDULED CONCRETE ITEMS

ADD THE FOLLOWING ADDITIONAL PAYMENT ITEMS:

"G 8.4.7 No-fines Concrete (describe class and position) (Additional payment item)..... Unit: m³

The relevant measurement and payment clauses for strength concrete (clause 8.4.3) shall apply.

G 8.4.8 Curing of concrete (structure to be stated)

(Additional payment item)..... Unit: Provisional Sum

The stated fixed provisional sum shall include all costs to cure the concrete as specified in Clause 5.5.8 and G-5.5.8 in the structures stated. The curing of concrete in other structures not stated will be deemed to be included in the rates

tendered for concrete under item 8.4.3. Payment of the stated provisional sum will be made in accordance with G-8.1.3 (b).

G 8.10 **Miscellaneous Items**

These items will be measured per metre, per square metre, per cubic metre or per number or as a sum as scheduled.

The rate or sum shall cover the cost of the complete supply and installation of the scheduled item in accordance with the specifications and as described in the Schedule of Quantities and as detailed on the drawings including casting into concrete where applicable.”

STRUCTURAL STEELWORK – SANS 1200 H

H 8 **MEASUREMENT AND PAYMENT**

H 8.3 **SCHEDULED STRUCTURAL STEELWORK ITEMS**

ADD THE FOLLOWING ADDITIONAL PAYMENT ITEMS:

“H 8.3.14 **Miscellaneous Items**

These items will be measured per metre, per square metre, per cubic metre or per number or as a sum as scheduled.

The rate or sum shall cover the cost of the complete supply and installation of the scheduled item in accordance with the specifications and as described in the Schedule of Quantities and as detailed on the drawings including casting into concrete where applicable.”

2.1.5. CIVIL TECHNICAL SPECIFICATIONS

Rand Water Civil Design Technical Specifications that shall apply to this contract are listed in this section.

It is worth noting that the Civil Technical Specifications listed in this section, applies to the valve chamber construction, unless stated otherwise in a particular subsection.

2.1.5.1. EXCAVATIONS AND EARTHWORKS

2.1.5.1.1. Clearing

Prior to carrying out excavation the Contractor shall clear such areas of the sites as are necessary for the proper execution of the works of all shrubs, bushes, other vegetation, fences, rubbish, debris and other obstructive material.

Where suitable topsoil exists within the limits of the area to be excavated the Contractor shall remove the topsoil to an average depth of 150 mm together with any veld grasses and other similar vegetation as directed by the Engineer. The topsoil shall be transported and deposited in temporary stockpiles.

All organic material and combustible rubbish shall with the prior written approval of the Engineer be burnt on the site. Care shall be taken to observe the provisions of the Atmospheric Pollution Act, 1965 (Act 45 of 1965) and any regulation published in terms of the Act. Care shall be taken to prevent fire from spreading to adjacent areas.

Fencing wire shall be neatly wound on suitable reels and all such wire together with all fence posts and other usable material from structures etc. shall be stacked at sites indicated by the Engineer.

2.1.5.1.2. Working in Roads

Before excavating the trench along or across any road the Contractor shall notify the property owners and the Engineer that the work is to be commenced and ascertain and comply with the conditions that have been imposed for working in or across the road.

The Contractor shall arrange the work to ensure a minimum of interruption to traffic and shall be liable for any injury to persons or animals and for any damage to property or things due to negligence on the part of the Contractor or his employees.

2.1.5.1.3. Approval of Operations

Prior to the commencement of each section or type of excavation the Contractor shall submit to the Engineer for approval a detailed programme of operations, methods and plant to be used for executing that section or type of excavation, including details of dewatering, pumping, shoring, drilling patterns, etc. The Engineer's approval will not be unreasonably withheld provided the method and equipment proposed can be expected to produce an acceptable end result and such approval shall not relieve the Contractor of his/her responsibilities for safety, programme or any other requirements of the contract.

The Contractor may use any method he chooses to excavate any class of material, but his/her chosen method of excavation shall not determine the classification of the excavation. The Engineer will decide and approve the classification of the material to be excavated.

2.1.5.1.4. Classification of Material

Material to be excavated shall be classified as follows:

Class B material shall be hard material and boulders greater than 1 m³ that, in the opinion of the Engineer, requires the use of explosives for its excavation. Material that can be ripped by a Caterpillar D8'H' machine (or similar machine with a minimum mass of 35 000 kg and flywheel power in excess of 220 kW) fitted with a single tine rear mounted ripper suitable for heavy ripping or a back-acting excavator of flywheel power exceeding 0,20 kW for each millimetre of tined-bucket width will not be classified in this category.

Class A material shall be all material that is not classified by the Engineer as Class B material.

2.1.5.1.5. Limits of Excavation

The bottom and sides of excavations in contact with concrete surfaces shall be finished sufficiently true to give the minimum thickness of concrete specified for the various structures. These excavation surfaces shall be free from loose, soft or friable material. No material shall remain within such lines.

2.1.5.1.6. Excavations to Be Approved

In no case shall excavations be filled in or covered in any way until the excavated surfaces have been inspected and approved by the Engineer.

The Contractor shall advise the Engineer whenever the excavations are ready for inspection or whenever it is necessary to cover up the work. In default of such notice the work so covered shall, on order of the Engineer, be uncovered by the Contractor and reinstated without extra charge.

2.1.5.1.7. Excavation

Topsoil is defined for the purposes of this contract as the upper layer of soft material with a depth not exceeding 150 mm below the natural ground surface in which veld or cultivated grass is growing.

Before proceeding with the bulk excavation the Contractor shall strip the topsoil over the area to be excavated plus a further width of 5m outside the payment lines. The use of rippers will not be permitted in Class A material.

Note that, in Works Area 1, the upper most top layer which consists of compacted fill material must be removed and disposed-off in a designated area, prior to stripping and stockpiling the original topsoil.

Any excavation in material below or outside excavation profiles, (overbreak), for surfaces against which mass or reinforced concrete is to be placed shall be filled with suitable in-situ material to the general excavation profile.

2.1.5.1.8. Trimming

Site or porous concrete shall be placed on a trimmed section in Class A material or backfill within 3 (three) days of achieving the final trim.

Trimming to the excavation profiles shall be sufficiently true to give the minimum thickness of concrete specified for the various elements of the structures. No material shall remain above or within the excavation profile.

Should the Contractor trim Class A material below or outside excavation profiles, (over excavation), in respect of surfaces against which geographic, piping, site, porous, mass or reinforced concrete is to be placed he shall fill in the volume so excavated with suitable material to a height 80 mm above the excavation profile compacted in horizontal layers not exceeding 150 mm finished thickness to 95% (ninety-five per cent) of the Modified AASHTO density at optimum moisture content and subsequently trim to the correct profile.

Alternatively the Contractor may, with the Engineer's permission, fill over-trimmed volumes by increasing the thickness of the porous concrete layer by up to 30 mm.

Trench excavation shall be carried out in all materials between the subsoil surface or the natural ground surface and trench excavation profiles as determined from the drawings.

The drainage pipe trenches shall, except in restricted areas, be excavated by machine in combination with the use of explosives and mechanical breakers where necessary from top to bottom to the trench excavation profiles or as instructed by the Engineer except as otherwise determined by the Contractor.

The profiles of the side walls of trench excavations shall be the safe slope profiles determined by the Contractor.

The excavation surfaces on the floor of the trench which are to receive the pipe bed or pipe support cradle shall, after completion, be free from loose, soft or friable material and no material shall remain above or within the trench excavation profiles.

If the trench is dug to a depth in excess of that required, in Class A material (over excavation) or Class B material (overbreak), the Contractor shall backfill suitable material, in layers of not more than 200 mm finished thickness, and compact these layers to 93% (ninety-three per cent) Modified AASHTO density at optimum moisture content.

The drainage pipeline to be laid across any road designated as a "minor road" shall be installed in a trench of normal width and depth for the full width of the road in accordance with the details shown on the drawings.

Excavation of unsuitable foundation materials is defined, for the purposes of this contract, as the removal of in-situ materials at or below excavation profiles which, in the opinion of the Engineer, are unsuitable as foundation materials in terms of design requirements.

Unsuitable foundation materials will include Class A materials which have the potential for collapse or are unacceptably compressible or Class B materials which form local pinnacles or plateaux at or near the prescribed profiles whose presence will result in substantial differential settlements of the structure founded in part on Class A and in part on Class B materials.

Excavation of unsuitable foundation material shall be carried out below excavation profiles over the areas and to the depths instructed by the Engineer but not exceeding 1 m depth.

The profiles of the sides of excavations carried out to remove unsuitable foundation materials shall be the safe slope profiles determined by the Contractor.

2.1.5.1.9. Generally

The Contractor shall set out the excavations accurately in accordance with the drawings and data supplied by the Engineer.

The Contractor shall provide, erect, set to line and level and maintain approved substantial working profiles on the perimeter of excavations and along the length of the trench at changes of grade and direction. Each working profile shall be fitted with a horizontal cross-bar set at a predetermined height above the designed excavation profiles to which excavations are to be carried out and have setting marks which will define the local setting out lines and the centre line of the trench. Where required by the Engineer the Contractor shall provide a working profile with the cross-bar extending across the full width of the trench. A working profile shall remain in position during all stages of the excavations until the concrete is placed or the pipe is laid past the chainage of the working profile. The Contractor shall provide sets of boning rods, templates and piano wire, for the sole use of the Engineer, for checking the profiles of the excavations. The Contractor shall also provide, set and

level all the pegs required to transfer lines and levels to the excavation floor in order to control the preparation of the prescribed profiles.

Excavation will be required to expose existing pipelines to allow the installation of the drainage line. In exposing existing pipelines the Contractor shall excavate by machine, or by hand if necessary, around and under the pipelines taking care to avoid damage to the bitumen or cement mortar coated pipes. Any damage caused to pipe coatings during excavations will be made good by Rand Water and any costs so incurred will be deducted from moneys due to the Contractor.

The Contractor shall provide and use equipment and machinery of adequate capacity and suitable type and quality for the efficient and expeditious execution of the work.

2.1.5.1.10. Over-break and Over-excavation

It is to be expected that during excavations material will be removed from below the prescribed profiles. In the cases where the excavation floor is formed of materials classified as Class B the additional depth will for purposes of this contract be termed over-break and can be expected to vary according to the nature of the rock, the jointing planes, the extent of weathering of the rock, the methods and procedures used in the blasting of the rock and the expertise of the personnel undertaking the blasting. In the case where the excavation floor is formed in materials classified as Class A, the additional depth will for purposes of this contract be termed over excavation.

2.1.5.1.11. Safety of Excavations

Excavations shall be undertaken in a safe manner in compliance with the regulations promulgated under the Occupational Health and Safety Act (Act 85 of 1993) or any amendment thereof. Safety precautions to be observed by the Contractor shall include the sloping, stepping or benching or shoring, timbering or otherwise supporting the sides of the excavations or any other provision as stipulated in Regulation 11 of the aforesaid act, with which the Contractor declares himself to be conversant.

The shoring method adopted shall be compatible with the excavating, backfilling and construction method and shall not restrict the installation and construction.

Shores shall be designed to withstand the earth pressures exerted upon them from the side of the excavation which shall include the superimposed loading of construction.

The Engineer may call upon the Contractor to timber the sides of the excavation at any point, without cost to Rand Water, which he may consider in any way dangerous. Such timbering shall be left in place until the completion of the work at the point affected.

Timbering shall consist of open planking, walings and substantial struts and shall be carried out in a workmanlike manner and to the satisfaction of the Engineer.

The Contractor shall allow for the removal of timbering immediately prior to backfilling or on the instructions of the Engineer.

MAINTAINING THE SIDES OF THE EXCAVATIONS IN A SAFE CONDITION SHALL AT ALL TIMES BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NO UNDER-CUTTING OF THE SIDES WILL BE ALLOWED

2.1.5.1.12. Protection of Work

The Contractor shall provide, at his/her own expense, all measures necessary for the protection of the excavations during the progress of the work, and shall be solely responsible for securing, lighting and watching all places dangerous to traffic, persons, animals or property, and shall be liable for all claims arising therefrom.

The excavations shall be maintained until the structures are completed and backfilled. Should the sides fall in or any debris or water accumulate in the excavations due to any cause the excavation shall be cleaned out and any damage arising therefrom made good by the Contractor at his/her own cost as directed by the Engineer.

2.1.5.1.13. Depositing Spoil from Excavations

Spoil is defined for the purpose of this contract as material excavated from the works and is to be dealt with in accordance with the following:

Topsoil shall be deposited from the excavations and stockpiled separately in temporary stockpiles. In order to conserve the bacteriological life in the topsoil the storage heaps, strips or layers shall not exceed 1,5m in total depth.

To the maximum extent possible all suitable materials excavated shall be used in the construction of the works. Such materials shall be selected from the unsuitable materials and stockpiled separately in temporary stockpiles on sites to be negotiated by the Contractor and approved by the Engineer.

Surplus spoil, rubble and debris from the excavations shall be loaded up and transported from the sites to a dumping site or sites, to be negotiated by the Contractor and approved by the Engineer, dumped, levelled and spread, all to the satisfaction of the Engineer. The frequency of the removal of rubble off site shall be, at minimum, as specified in the Environmental Management Plan.

No dumping site shall be used without the prior written approval of the Engineer and the owner of the property on which it is proposed to dump spoil.

The assessment of the quantity of suitable material to be stockpiled for filling shall be the responsibility of the Contractor entirely and any deficit shall be made good by the Contractor without cost to Rand Water. The balance of the suitable material for filling which is assessed as surplus to the requirements of the work may be removed from the sites as excavations proceed.

No material shall be stockpiled in violation of any Statute or ordinance or to obstruct any watercourse or drainage channel.

In the case of trench excavations, the spoil bank shall be trimmed well back from the edge of the excavation so as to leave the minimum of 1,0 m clear between the edge of the spoil bank and the edge of the trench, provided that sufficient space is available on the opposite side of the trench for pipe laying purposes. Where this is not the case, the spoil bank shall be a minimum of 7 m clear of the excavation. The Contractor shall keep these strips clear of spoil at all times.

The top surface of all permanent spoil dumps shall be left smooth and even and side-slopes, where required, are to be stable for the material concerned. Adequate drainage to the top surface and side-slopes shall be provided to prevent future erosion.

2.1.5.1.14. Material for Filling

All material used in the filling beneath structures, behind walls, for formation of terraces and embankments and backfilling of pipes shall be suitable material as defined in the following clause. Suitable material for filling beneath structures, behind walls, formation of terraces and embankments etc. and for stage II backfill in drain pipe trenches shall comprise loose, fine soil or powdered soft shales which on excavation, handling and compaction break down into a soil like texture and shall have the characteristics of a sandy silt or clayey sand material with a plasticity index not exceeding 15. The fill shall contain no ouklip or materials deleterious to concrete and shall be free of pebbles, stones and fragments of shattered rock with maximum dimensions exceeding 50 mm. The material used shall have a uniform moisture content and be free from roots and deleterious proportions of organic matter. The material shall not be too wet for practical drying to the required moisture content. Alternatively, where instructed by the Engineer, loose fine soil

with a plasticity index exceeding 15 shall be used as suitable material for filling beneath structures and behind walls in association with cement or lime stabilization.

Suitable material for drain pipe bed and for stage I backfilling in drain pipe trenches shall comprise loose, fine soil or powdered soft shales which on excavation, handling and compaction break down into a soil like texture and shall have the characteristics of a sandy silt or clayey sand material with a plasticity index not exceeding 15. The fill shall contain no ouklip or materials deleterious to bitumen wrapped steel pipes and shall be free of pebbles, stones and fragments of shattered rock with maximum dimensions exceeding 10 mm. The material used shall have uniform moisture content and be free from roots and deleterious proportions of organic matter. The material shall not be too wet for practical drying to the required moisture content.

Suitable material for use in road sub-base and base layers in drainage pipeline trench at road crossings shall comprise selected graded crushed stone Class G1 as specified in terms of TRH14 - Guidelines for Road Construction Materials.

2.1.5.1.15. Source of Materials

Unless authorized otherwise by the Engineer, suitable material shall be selected only from materials excavated under the contract.

If insufficient suitable material for filling is available for selection from the excavations the Contractor shall with the approval of the Engineer, supplement the available suitable material for filling by importing suitable material approved by the Engineer. The Contractor shall negotiate for, obtain, load and transport to site the supplementary requirements for filling.

2.1.5.1.16. Compaction of In-Situ Material

Where required, the in-situ material at the excavation profile or at the surface exposed after the removal of unsuitable foundation material shall be ripped to a depth of 150 mm and treated with 4% lime and 4% cement, and then compacted to 90% (ninety per cent) of the Modified AASHTO density below the exposed surface.

Compaction shall be carried out between optimum moisture content and optimum moisture content plus 2% (two per cent). Density testing of the compacted in-situ material shall be carried out in accordance with these specifications.

Any wetting of the soil shall be done overnight before compaction to ensure even soaking of the soil.

2.1.5.1.17. Filling

Filling Below Structures

The material used for filling below structures shall be suitable material in accordance with the approved construction drawings, project specifications and the geotechnical report recommendations.

After the excavation profile or the surface exposed after removal of unsuitable foundation material has been accepted in terms of Clause E8 and where required, in terms of Clause E16, the filling below structures may commence.

All filling below structures shall be placed in 150 mm finished thickness layers compacted to 95% (ninety-five per cent) of the Modified AASHTO maximum dry density at moisture contents in

the range between optimum moisture content and optimum moisture content plus 2% (two per cent).

The filling shall be installed such that the final layer shall be at a level at least 80 mm above and subsequently trimmed back to the required profile.

Filling Behind Walls and Structures

The material used for filling behind walls and structures shall be suitable material in accordance with Clause E14. When the concrete in structures below natural ground surfaces has attained adequate strength the space between the concrete structures and the excavation face shall be filled in with suitable material.

The filling shall be compacted to a minimum of 90% (ninety per cent) of the Modified AASHTO density at optimum moisture content, as directed by the Engineer, in layers not exceeding 200 mm in thickness after compaction. Compaction shall be carried out with mechanical rammers and vibrating rollers in a series of continuous operations over the full width of the layer concerned. Fill shall not be returned against the walls until permission has been obtained from the Engineer. The filling shall be taken up to natural ground surface or, where applicable, to the subsoil surface.

Filling In Trenches

The material used for filling below drain pipe bed shall be suitable material in accordance with Clause E14.

The filling below pipe bed or pipe support cradle shall be placed in 200 mm finished thickness layers compacted to 90% (ninety per cent) of the Modified AASHTO maximum dry density at moisture contents in the range between optimum moisture content and optimum moisture content plus 2% (two per cent).

The filling shall be installed such that the final layer shall be at a level at least 80 mm above and subsequently trimmed back to the trench excavation profile.

The pipe bed and pipe support cradle shall be installed on the floor of the trench excavation profile in accordance with the details shown on the drawings.

As the valve chambers and other structures are completed the Contractor shall fill in the trench without delay either to the full extent or partially as and when directed by the Engineer in accordance with the details shown on the drawings.

The earth filling under, around and over the pipe up to 300 mm above the pipe shall be of suitable Stage I material defined in Clause E14 material compacted by mechanical rammers in 150 mm finished thickness layers to 90% (ninety per cent) of Modified AASHTO density.

The remainder of the backfilling, to natural ground surface or the subsoil surface shall be suitable Stage II material as defined in Clause E14 placed in the trench in layers not greater than 300 mm finished thickness and compacted by mechanical rammers and vibrating rollers to 90% (ninety per cent) of Modified AASHTO density.

Filling in Trenches at Road Crossings

The material used for filling below drain pipe bed, under, around and over the pipe up to the subbase level specified on the drawings shall be of suitable Stage I material defined in Clause E14 material compacted by mechanical rammers in 150 mm finished thickness layers to 95% (ninety-five per cent) of Modified AASHTO density at optimum moisture content.

Filling Topsoil

After the backfilling of the excavations has been completed to the subsoil surface the topsoil shall be returned to the upper 300 mm layer from which it was removed to restore the natural ground

surface. The topsoil shall be evenly spread and lightly compacted to leave the upper ground surface in a neat and tidy condition as near as may be to the original condition encountered before excavation commenced or to such details for embankments as are indicated on the drawings.

Generally

Any surface on which a layer of filling is to be placed shall be clean, firm and suitable for the bonding of a successive layer of filling.

If, in the opinion of the Engineer, the surface to receive any layer of filling is too smooth or dry to bond properly with the next layer, it shall be moistened and scarified to the satisfaction of the Engineer before the next layer is placed.

All suitable material for filling shall be brought within the required uniform moisture content range by methods approved by the Engineer. The required moisture content range shall be determined by the Contractor.

The filling of compacted material shall be carried out in horizontal layers of even thickness for the full area being refilled, or such portion of that area as the Engineer may approve, such that, after compaction, all intermediate completed layers are constructed to within a 30 mm tolerance of the thickness specified.

In order to ensure that the refilling is carried out in accordance with Clause E17 the Contractor shall establish levels, working profiles, lines, etc for the use of the Engineer in checking the accuracy of the work and shall not proceed with the construction of successive layers until the Engineer has accepted the accuracy of the work and the degree of compaction achieved in the layer under construction.

Moisture/density tests on all compacted material below structures and behind walls shall be conducted by the Contractor. Further density tests may be ordered by the Engineer.

Such tests shall be done in situ using the sand replacement method or by other approved methods. All test results shall be submitted to the Engineer for approval.

The crusher run fill shall be placed in the trench and compacted as required at the optimum moisture content. The Contractor shall take all necessary measures to prevent drying out of the material prior to the completion of compaction.

Crusher Run Fill

Crusher run fill shall comprise a stable mixture of fragmented rock and fine binder material complying with the following grading requirements:

Sieve size mm	Percentage passing
26,5	100
19	85 - 95
13,2	71 - 84
4,75	42 - 60
2,0	27 - 45
0,425	13 - 27
0,075	5 - 12

The following indices and limits shall not be exceeded:

Maximum flake index: 35; Atterberg limits: 25; Plasticity index: 6 and linear shrinkage: 3.

The crusher run fill shall be thoroughly mixed to provide a homogeneously graded material and the quantity of water to provide the optimum moisture content for compaction to the required density shall then be added and the material again thoroughly mixed.

2.1.5.1.18. Testing of Placed Material and Material to Be Placed

The Contractor is to identify a South African National Standards accredited laboratory for the intended use of testing soil material to be used in the works. The list of proposed accredited laboratories is to be presented to the Engineer for review and approval. The criteria of what tests are to be conducted are to be determined by the Engineer and communicated to the contractor.

2.1.5.2. CONCRETE, FORMWORK AND REINFORCEMENT

2.1.5.2.1. Cement

The cement used for all portions of the structures (except where otherwise stated) shall be one of the following:

- a) A mixture in equal proportions by mass of Portland cement complying with SABS ENV 197 1 1992 and milled granulated blastfurnace slag ground to a fineness not less than 3 500 cm²/g and having a glass count not less than 95% (ninety five per cent) by mass.
- b) Portland cement complying with SABS ENV 197 1 1992.
- c) A mixture of approved proportions by mass of Portland cement complying with SABS ENV 197 1 1992 and pulverised fly ash from an approved source complying with ASTM C618.

If required by the Engineer, the Contractor shall provide certificates of tests showing that the cement on the site conforms with these Specifications and requirements. All cement used on the work shall at all times be subject to the approval of the Engineer and any cement rejected shall be immediately removed from the site.

Aluminous cement shall not be used.

No cement from broken sacks shall be used on the works. All cement spilled on the floors of the storage sheds shall be swept up weekly and removed from the works together with all broken sacks of cement.

2.1.5.2.2. Fine Aggregate

Fine aggregate shall be clean, angular, sharp drift, pit or river sand entirely free from vegetable or any other foreign matter and shall be in accordance with SABS 1083 (latest edition). It shall be screened and washed if directed by the Engineer. No dump or crusher sand shall be used.

Samples of fine aggregate proposed to be used are to be submitted to and approved by the Engineer.

Fine aggregate shall be stored on a concrete surface and washed sand shall be allowed to drain for at least 24 (twenty four) hours before use. The Engineer may require the Contractor to test the sand daily (or more frequently if necessary) for moisture content, impurities and grading before use. Water demand shall not exceed 195 l/m³

2.1.5.2.3. Coarse Aggregate

Coarse aggregate for concrete shall be hard, non-friable quartzite or other suitable rock, in accordance with SABS 1083 (latest edition) crushed and screened to the specified sizes, of good shape, clean and free from dust.

The maximum size of aggregate shall be 25 mm in floor and walls and 19 mm in roof slab.

Coarse aggregate containing more than 19% (nineteen per cent) shale will not be accepted. Samples of coarse aggregate proposed to be used shall be submitted to and approved by the Engineer. Any broken stone delivered to the site which contains 5% more flaky and/or 10% more elongated particles than the approved sample will be condemned and shall be removed from the site. Voids ratio shall not exceed 47% (forty seven per cent).

2.1.5.2.4. Water

The quantity of water used for concrete shall be carefully adjusted so that between the time that the concrete is placed and worked into its final position and when it hardens. The water shall be carefully measured so as to ensure the same quantity being used in each batch of concrete. Sloppy or over wet concrete will be rejected and the quantity of water shall at all times be subject to regulation by the Engineer.

2.1.5.2.5. Gauging and Proportioning

The material to be used for concrete shall be accurately gauged in correctly designed watertight gauging boxes so proportioned that the cement is measured by whole sacks; portions of sacks will not be allowed.

Gauging boxes shall be submitted to the Engineer for approval.

2.1.5.2.6. Concrete Strength Requirements

The concrete mix for each portion of the work shall be specially designed by the Contractor to comply with the following requirements and shall be subject to the prior approval in writing of the Engineer:

A. 15 MPa Concrete (Unreinforced)

The minimum works cube compressive strength shall be 15 MPa at 28 (twenty eight) days.

B. 30 MPa Concrete (Reinforced)

The minimum works cube compressive strength shall be 30 MPa at 28 (twenty eight) days and the slump limits shall not be less than 30 mm nor more than 80 mm.

Concrete test cubes shall be taken for each pour of concrete. The Contractor shall be responsible for the mixing, curing and testing of all cubes and shall submit test results from an approved laboratory. The number of tests to be conducted, as well as the test interval shall be as detailed under section 2.2.8 of this specification.

2.1.5.2.7. Testing of Concrete

During the progress of construction, tests shall be made under the direction of the Engineer to determine whether the concrete being produced complies with the standards of quality, durability and strength specified. The Contractor shall be responsible for testing of concrete on site or an approved laboratory, as per instruction by the Engineer, and shall submit test results to the Engineer.

A. Frequency

Unless otherwise directed by the Engineer, for each class of concrete, one sample shall be taken from each day's casting and one sample from at least every 50 m³ of each grade of concrete placed for the purpose of compressive strength testing. Only one sample shall be drawn from any one batch of concrete and no sample shall be taken of any grade until at least 3 batches of such grade have been mixed and discharged for that particular pour.

Test Cubes and Cylinders

The Contractor shall prepare 6 test cubes, 150 mm nominal size, from each sample for compressive strength testing. Three of each set of six test cubes shall be tested at 7 days after making and the remaining three cubes at 28 days after making. The average of the results for three cubes will be taken as the test result.

The Contractor shall prepare 3 cylinders, 150 mm diameter by 300 mm long from each 500m³ of grade 30 concrete placed, in accordance with SABS Test Methods 861, 862 and 863, for the purpose of permeability tests. The cylinders shall be cured and stored in accordance with the requirements of the NBRI (National Building Research Institute).

Compressive Strength Tests

If the tests disclose a consistent relationship between the 7-day and 28-day strengths of the concrete, the 7-day strength may be used as a basis for the assessment of the 28-day strength. Both 7-day and 28-day strength tests shall be carried out regularly throughout the contract to provide a record of any seasonal variation in the relation between the 7-day and 28-day strengths.

Until such a relationship has been established on site the 28-day strength shall be taken to be not more than 1,67 times the 7-day test result in the case of ordinary Portland cement (and twice in the case of a mixture of ordinary Portland cement and milled granulated blast furnace slag or pulverized fuel ash).

If a 28-day strength assessed from a 7-day test result fails to meet the acceptance criteria for the concrete, the Contractor may at his/her discretion, demolish and re-construct at his/her own expense the volume of concrete affected; or, alternatively he/she may elect to extend the time for removal of formwork and/or curing. The acceptance criteria for the concrete will be as specified and based on the 28-day test results.

Acceptance criteria for concrete

If the average of the results of the tests on three test cubes from any sample of a specific class of concrete is more than 3 MPa below the specified 28-day works cube strength, then the concrete represented by such result/s will be deemed not to satisfy the requirements of the Specification.

The average of any 3 consecutive test results of a specific class of concrete shall exceed the specified 28-day works cube strength by at least 2 MPa. If the average lies between the specified 28-day works cube strength and the specified strength plus 2 MPa, then the concrete represented by such results will be deemed not to satisfy the requirements of the Specification

The degree of control on the batching of concrete shall be such that the standard deviation of the most recent 30 of 30 or more test results (i.e. the average of 3 cubes each) does not exceed 5 MPa.

The average strength of the most recent 30 of 30 or more test results shall not be less than the specified strength plus 1,64 standard deviations. If this average fails to meet this requirement, or if it becomes clear from plots of the moving average of 6 test results that this situation is approaching, the mix design shall be adjusted at the cost of the Contractor to ensure compliance with this criterion.

No more than 5 per cent of all test results shall exceed the specified strength plus 16,5 MPa. If these requirements are exceeded when considering the most recent 30 of 30 or more test results, the mix design shall be adjusted at the cost of the Contractor to ensure compliance. Alternatively, the Engineer may require that the area of reinforcement at any particular location in the structure be increased at the cost of the Contractor to control potential increased shrinkage cracking.

If cracking in excess of that permitted by BS 8007:1987 or any revision thereof occurs in any part of the structure where the concrete was found not to comply with standard deviation requirements and reinforcement had not been increased to minimise cracking, then the Contractor shall repair such cracks at his own expense to the satisfaction of the Engineer.

If the evaluation of test results indicates that the concrete represented by such results does not satisfy the requirements of the Specification, the Engineer in his sole discretion may adopt one or more of the following procedures in the sequence given to determine whether replacement or strengthening of the structure is necessary :-

- Non-destructive testing, subject to similar concrete of proven acceptable quality being available in comparable members in the same construction as a reference. (Impact hammers and ultrasonic testing are two examples of such techniques which may be used provided that such apparatus has been previously calibrated.)
- The testing of drilled cores in accordance with current SANS standard methods.

Where cube test results shows the concrete strength to be unacceptable, or if a tested portion of the structure fails to pass the tests, the Contractor shall, on the instructions and directions of the Engineer, either replace or strengthen by approved means :-

- each section that contains concrete that failed;
- any other section, the functional purpose of which is affected by the concrete that failed.

If on the basis of cube test results the concrete does not meet the requirements of the Specification, but non-destructive testing or testing of drilled cores shows that the concrete strength is acceptable : then if the Engineer shall be satisfied that the structural adequacy and durability of that part of the structure in which the concrete has been used is not seriously impaired, the concrete shall be deemed to be acceptable, but the mix design and other factors influencing the quality shall be reviewed in order to ensure that further concrete cast will meet the requirements of the Specification.

Permeability Tests

The permeability coefficient of the test cylinders, as tested by the NBRI of the CSIR, shall not be greater than 5×10^{-7} mm/second. If the permeability coefficient exceeds this value, the Contractor shall show that the permeability of the concrete placed in the work complies with the Specification, failing which, the work will be rejected.

Other Tests

The Contractor shall be responsible for conducting the following tests, at the instruction of the Engineer, and submit the results to the Engineer:

- apparent density
- UCS (Unconfined Compressive Strength)
- Phenolphthalein indicator (or Carbonation depth) test
- Cover test
- Durability tests: water sorptivity, oxygen permeability and chlorine conductivity

2.1.5.2.8. Admixtures

Admixtures shall be used only if approved in writing by the Engineer.

2.1.5.2.9. Mixing

Where no ready-mix concrete is used, mixing shall be done in a mechanical concrete mixer of approved design.

Mixing of concrete shall comply with the requirements of SABS 1200 GB (clause 5.3.3).

2.1.5.2.10. Placing Concrete

No concrete shall be mixed or ready-mix delivered until the foundations, ground water handling arrangements, reinforcement, joint treatment, clean up, formwork and concrete mixing procedure, handling and placing equipment have been approved by the Engineer.

Concrete shall be placed in position immediately after it is mixed and before any initial set has taken place. Leavings shall not be used in any way but shall be discarded and immediately removed from the site.

Concrete shall be placed so as to prevent the separation of constituents and shall be thoroughly rammed and compacted while being placed.

Concrete shall surround the reinforcing bars completely. The reinforcing bars shall not be displaced when depositing or ramming concrete. While concrete is setting it shall not be disturbed or shaken and shall be kept saturated for 7 (seven) days after placing.

2.1.5.2.11. Concrete during Cold Weather

During cold weather no material having a temperature below 5°C shall be used for making concrete.

No concrete shall be placed when the ground or air temperature is below 2°C or if the ground or air temperature is likely to fall below 2°C within 6 (six) hours after placing the concrete.

2.1.5.2.12. Protection

Concrete shall be kept damp and protected against the action of sun, wind and frost by means of wet sacks, wet sand or other approved method, for at least 7 (seven) days after being placed in position.

2.1.5.2.13. Finishing

Concrete shall be clean, hard, non-porous and entirely free from honeycombing. The Contractor shall cut away, remove and replace, without compensation, any concrete that is honeycombed or porous, or that the Engineer may consider in any way of inferior quality. All top surfaces of floors, slabs or beams shall be puddled until the fines rise to the surface.

2.1.5.2.14. Construction Joints

All the construction joints are to be pre-molded with sealant and doweled. The isolation joints are to be pre-molded around the column stub, in a circular and diamond shaped manner, as per the engineering drawings.

Suitable openings shall be left in the shuttering temporarily to facilitate the removal of sawdust, shavings, nails, debris etc.

A grout made of 2:1 cement mortar shall be run along the joint as the new concrete is being placed. The Tenderer shall include for the cost of shuttering, hacking and preparing all surfaces for construction joints in the schedule rates for concrete.

2.1.5.2.15. Formwork

Correctly designed shuttering, centring, and casing, rigidly supported and braced, shall be erected. Particular care shall be taken that no movement of the formwork takes place while the concrete is being placed in position or after it has been placed in position.

Forms shall be of good material of uniform thickness and width, strongly made and held in place by external bracing so that no distortion can occur. The use of damaged forms is prohibited.

All clear-spanning beams and lintels shall have a camber of 6 mm to every 3 m of length.

Joints between forms shall be sufficiently tight to prevent leakage of fines and cement. Forms shall be thoroughly cleaned down before they are re-used.

Formwork designs are to be undertaken by the Contractor and thereafter submitted to the Engineer for review and approval prior to the erection of formwork – the designs are to comply with all relevant SANS specifications. All formwork shall be approved by the Engineer before any concrete is placed.

Any runways required for the placing of concrete shall be so constructed as to be entirely independent and free from the concrete forms.

2.1.5.2.16. Stripping Of Formwork

Formwork shall be removed carefully so as not to damage the concrete and the minimum periods during which formwork shall remain in position after concreting are:

Sides of slabs	-	24 (twenty-four) hours
Sides of Walls, Beams and Unloaded	-	4 (four) days
Columns		
Slab soffits	-	10 (ten) days
Cantilever slab soffits	-	15 (fifteen) days
Beam soffits: props left under	-	7 (seven) days
Removal of beam props	-	14 (fourteen) days

The Engineer may order forms to be left in position for periods of at least 50% (fifty per cent) longer than those given above at no extra charge to Rand Water IF, IN HIS/HER DISCRETION, HE/SHE CONSIDERS THE WEATHER TO BE VERY COLD.

Stripping of formwork shall comply with the requirements of SABS 1200 G.

2.1.5.2.17. Steel Reinforcement in Concrete

The bars for reinforcement shall be of high tensile and mild steel and shall conform in every respect to the latest appropriate standard specification; welded fabric shall be manufactured from high tensile steel wire.

All bars shall be clean and free from scale or grease and shall not be oiled or galvanised. The amount of rust shall be limited to 0.9% of the volume of a rust free bar, in addition all rebar shall be free of loose rust.

The size, length and bending of the reinforcement shall be strictly in accordance with the bending schedule and detail drawings supplied to the Contractor. All bending shall be done cold.

2.1.5.2.18. Placing Steel Reinforcement

The reinforcing bars shall be placed accurately in the exact positions shown on the detail drawings. The bars shall be wired together with 1,6 mm diameter black wire at every second point of intersection and shall be fixed so as to prevent any displacement during concreting.

All placing of reinforcement shall be done well in advance of the concrete and no concrete shall be placed until the reinforcement in position has been inspected and passed by the Engineer. The concrete cover shall be measured from the face of the concrete to the outside of main reinforcement nearest the face of the concrete and is exclusive of any plaster or finishing material.

The use of plastic spacer blocks will not be permitted.

2.1.5.2.19. Inspection of Work

All erection of formwork, placing of reinforcement, chipping of concrete, etc. shall be completed by 15:00 on the afternoon proceeding the day on which it is proposed to cast concrete, to enable the Engineer to inspect the works during normal working hours.

The Engineer may increase this notice period up to 24 (twenty four) hours before concreting of work commences, where large sections of work are involved.

2.1.5.3. STRUCTURAL STEELWORK AND SUNDRY ITEMS

2.1.5.3.1. General Requirements

The steelwork shall be supplied completed with plates, bolts, trimmers, etc., necessary for the completion of the contract.

2.1.5.3.2. Sub-Contractors

The Contractor shall satisfy the Engineer that any proposed Sub-Contractors for e.g. fabrication, erection etc., have the necessary facilities to carry out the work to the standards and at the rate of progress required.

2.1.5.3.3. Materials and Standards

All structural steel materials shall be new Grade S355JR and shall be in accordance with SANS 1431. The Contractor shall, if necessary, satisfy the Engineer from his/her records that all materials meet the above requirements.

All bolts and nuts shall be of the class specified by in the construction drawings and shall be in accordance with the relevant SANS or ISO standards. Electrodes for welding shall comply with requirements of SANS 2001-CSI and SANS 10162: Part 1.

Stair treads and landings shall be Rectagrid open-grid flooring.

2.1.5.3.4. Drawings

The Contractor shall prepare and submit a full set of fabrication drawings including the design of connections to the Engineer for approval. No fabrication shall be put in hand until the necessary approval has been given.

The Contractor shall allow in his/her programme a period of two weeks for the approval of any drawing.

The final drawings shall be blackline unfolded, untearable, 0.075 mm thick transparency film, polyester base, matt finish on both sides, bearing Rand Water standard drawing title block. The size of the final drawings to be supplied shall comply with the ISO A series of drawing paper.

2.1.5.3.5. Workmanship

Steelwork shall be of welded or bolted construction and shall comply with the requirements of SANS 10162. All steelwork welded or bolted together shall be in full contact over the whole of the meeting surfaces.

All welding shall be shielded metal arc welding (SMAW) complying with the requirements of SANS 2001-CSI and SANS 10162: Part 1. Highly skilled welders are required to execute all welding, under the most careful and expert supervision.

The prepared fusion faces of the weld shall be free from all irregularities, slag, oil, paint or any substance which may affect the quality of the weld. Components to be welded shall be securely held in their correct relative positions during welding and the welding sequence adopted shall be such that distortion is reduced to a minimum.

All connection shall develop the full strength of the members connected. Unless otherwise stated, the Contractor shall provide for suitable field connections that will, in his/her opinion, afford the greatest overall economy consistent with design requirements.

2.1.5.3.6. Fabrication Tolerances

Completed members shall be free from twists, bends and open joints. Sharp kinks or bends shall be cause for rejection of material.

Straightness of compression members shall not deviate by more than 1/1000 of the axial length between points which are to be laterally supported.

A variation in length of not greater than 1 mm is permissible in the over a 1000 mm length of members with both ends finished for contact bearing. Members without ends finished for contact bearing, which are to be framed to other steel parts of the structure, may have a variation from the detailed length not greater than 2 mm for members 10 m or less in length and not greater than 3 mm for members over 10 m in length.

Open grid flooring shall be panels, either riveted or welded at each intersection and of approved type. The pattern of the grid is to be uniform and the flooring is to be secured to the supporting steelwork either by welding or with suitable clips and/or bolts, as directed. Securing clips must be of such design that they will still work under vibration of the structure. The bars forming the grid shall be straight, free from defects and set-square and/or parallel to each other.

The Engineer shall be advised as soon as the fabrication of steelwork is in hand so that he may inspect and examine the materials and workmanship during fabrication. The Engineer or his duly authorized representative shall have access to the Contractor's premises for all reasonable times for the purpose of inspection.

2.1.5.3.7. Protection of Steelwork

All steelwork shall be inspected at the maker's works by Rand Water's Inspector before shot-blasting, galvanizing or painting.

After inspection all fabricated steelwork shall be cleaned by steel shot-blasting to produce a matt surface of even texture, free from rust and scale and without sharp peaks of metal which may protrude through subsequent paint coatings. Preparation of steelwork shall be generally in accordance with SABS 064. Care shall be taken to remove all abrasive residues prior to priming.

All steelwork for internal stairs and ladders and handrailing shall be hot-dip galvanised to SABS 763 after fabrication. All bolts and fastenings shall be corrosion resistant.

Grating sump covers shall be hot-dipped galvanised after fabrication.

2.1.5.3.8. Drawings and Information to be provided after acceptance of the Tender

All detail drawings, general arrangement drawings and details of the proposed shoring and dewatering of excavations, installation of chamber waterproofing ,etc. shall be subject to approval

by the Engineer and shall be submitted for such approval as soon as possible after the contract has been placed.

Rand Water will not be responsible for any delays, loss or inconvenience to the Contractor through failure to comply with this requirement.

The Contractor shall prepare and submit to the Engineer for approval, all the necessary working and detail drawings and schedules of steel reinforcement to meet his approved progress schedule. The Contractor shall allow at least two weeks for approval by the Engineer of any drawings or schedule, and shall not be entitled to claim extra payment in respect of extra cost arising from delay in the approval of drawings or schedules.

Any delays due to subsequent modification of these drawings or schedules shall not be a cause for extending the time for completion of the contract; adequate notice of any modification shall be given by the Contractor to enable all necessary drawings and information to be produced and approved so that the work can proceed without delays.

The Contractor shall be responsible for any errors that may rise from any defects in the drawings supplied by him and for any loss, damage or expense sustained by Rand Water in making good such errors.

Final drawings shall be on unfolded, untearable transparent film, with a polyester base, having a matt finish on both sides and a thickness of 0.075 mm. These Drawings shall bear Rand Water's contract number (i.e. RW01288/16). In addition where drawings have been completed using CAD programme, compact disc copies of each drawing shall be provided either on AUTOCAD or DXF format.

Drawings shall not be larger than size A0 in accordance with SANS 10111-2011. In all cases the drawing is to be in accordance with this standard.

APPENDIX A – SITE EXPLORATION DATA

Geotechnical Recommendations report is not available.

PART 3 - SHE SPECIFICATION

This is provided separately in the folder for Health and Safety

PART 4 - ENVIRONMENTAL MANAGEMENT PLAN (“EMP”) & ENVIRONMENTAL AUTHORISATION (“EA”) (WHERE APPLICABLE)

This is provided separately in the folder for Environmental Authorisations and Compliance

PART 5 - SITE RULES & REGULATIONS

SITE BOUNDARIES

The Contractor shall confine his activities to the area in the vicinity of designated sites, which is fenced and the actual boundaries of the site will be pointed out by the Project Manager. The Contractor shall not extend his activities outside the boundaries unless the Project Manager has specifically authorised the extension in writing

SITE ACCESS

A Site Access Certificate will be required before the Contractor is granted access to site. Please see Additional Particular Conditions of Contract for details of this certificate and where to obtain it.

POSSESSION OF SITE

The written order to commence the work will be deemed to give the Contractor possession of the site. In the event of any portion of the work or completion of the contract being delayed due to the Employer delaying the Contractor in taking possession of the site, an extension of time may be allowed by the Project Manager. The Employer shall not be liable for any payment in respect of such delays.

ACCOMMODATION ON SITE

No housing is available. The Contractor's employees will not be allowed to be accommodated on the site.

The Contractor shall erect, maintain and remove on completion of the work, ample temporary offices and sheds to the Project Manager approval, for proper storage of perishable and other materials and for the use of the workmen.

LATRINES

The Contractor shall provide for the duration of the contract, latrine accommodation on the site in the form of chemical closets for the use of persons employed on the works. All latrine accommodation provided by the Contractor shall be efficient, sanitary and non-offensive and all sanitary fees payable to any local authority shall be paid by the Contractor.

ACCESS ROADS

The Contractor shall be liable for all unnecessary and unreasonable damage caused by his equipment and/or transport to the access roads and fences. The cost of repair and reinstatement of unnecessary and unreasonable damage to these roads and fences will be deducted from moneys due to the Contractor.

SERVICES ON SITE

A sufficient supply of water is available at a convenient point at the sites from which the Contractor shall be responsible for the distribution of water.

The Contractor shall be entitled to use, for the purpose of carrying out the installation, such supplies of electricity and water as may be available on the sites, but shall provide, at his own expense, any

apparatus necessary for such uses; no charge will be made for these facilities. The supply of electric power is limited to the use of small tools only (3 kVA); welding machines and similar equipment shall be engine driven. The actual supply of these services is not guaranteed.

There is no compressed air available on the site.

SITE SECURITY

The sites are subject to strict security control and the Contractor and his work staff shall comply fully with any requirements imposed by the Employer's security personnel. Permits, issued by the Manager of the site, are required for admission to the sites and, before starting work on the sites, the Contractor shall make arrangements with the Engineer for the issue of the necessary permits for himself and his employees. For purposes of identification, all personnel will be required to carry their identity documents and shall show these, on request, either at entry to the Designated Pumping Station or within the Pumping Station site. The Contractor and his employees will be confined to the site, and the access roads listed above and action will be taken against anyone outside the prescribed areas.

CLEANING UP OF WORKS AND SITE

The Contractor shall maintain the whole of the site in a clean and orderly condition, to the satisfaction of the Engineer. On completion of the work the Contractor shall tidy up the site to the satisfaction of the Engineer; all temporary buildings shall be dismantled and removed; all surplus material, debris etc. shall be carted away and the whole site shall be left in a neat and orderly condition.

INDUCTION

The Contractor shall be responsible for acquainting him or herself with and attending any safety induction courses presented at the applicable sites.

The Contractor shall supply the following documentation to the Employer's Representative, which will be sent to the relevant sites prior to induction;

- ID copies of all the personnel that will be working on site,
- Valid Letter of Good standing (COID certificate) from the Workman Compensation,
- All the signed appointment letters as per construction regulation. E.g. Building work Supervisor, Scaffolding Inspector, Safety Officer /Representative, etc.
- Signature of the Engineer or the Employer's Representative in charge of the contract,
- Initials on each page by the Contractor in charge of the Contract,
- Tool list,
- Candidates to be present for the Induction,
- Health and Safety plan, and
- Risk Assessment plan.

SECTION E

DRAWINGS

DRAWINGS

The following Drawings shall form and be read as part of the Contract:

Drawing No.	Rev. No.	Drawing Description
<u>Civil</u>		
R0 39662/001		General Arrangement for the DN600, DN450 Sluice Gate Valve and Air Valve chamber 1 of 4
R0 39662/002		General Arrangement for the DN600, DN450 Sluice Gate Valve and Air Valve chamber 2 of 4
R0 39662/003		General Arrangement for the 200mm Air Valve along H37 pipeline 3 of 4
R0 39662/004		General Arrangement for the 300 dia scour valve chamber 4 of 4
<u>Pipelines</u>		
RA 21570		General Arrangement for the 200mm dia Air Valve chamber