O. R. TAMBO DISTRICT MUNICIPALITY

O.R. TAMBO
DISTRICT MUNICIPALITY

PROJECT NUMBER: MIS 403 690 A

DESCRIPTION: QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT

CONTRACT 1

MUNICIPAL INFRASTRUCTURE GRANT (MIG)

MAY 2023

NAME OF TENDERER: _____

TENDER AMOUNT: _____

CSD SUPPLIER NUMBER: _____

CLOSING DATE & TIME: **21 JUNE 2023 @ 12H00**

Prepared for:
The Municipal Manager
O. R. Tambo District Municipality
Private Bag X6043
MTHATHA
5099

Tel. No. (047) 501 6400

Prepared by:
The District Engineering Services
O. R. Tambo District Municipality
Private Bag C6043
MTHATHA
5099

Tel. No. (047) 501 6425

PLEASE CHECK **x / √**

1. That you have read all the pages of the tender document. ……..

2. That you have completed ALL the forms required to be completed in NON-ERASEABLE INK. ……..

3. That your arithmetic calculation in the pricing schedule is correct. ……..

4. That you have attached ALL necessary documentation relating to the Composition of the tendering entity, i.e. ……..

   (a) Company registration documents naming the shareholders and Directors / members of the company, close corporation etc.

   (b) Joint venture agreement, if tendering entity is a joint venture.

5. That the **COMPLETE** tender document is submitted. ……

6. That the **FORM OF OFFER** is completed in full and signed. ……..

7. That ALL returnable documents are submitted. ……..

8. That ALL returnable schedules are completed and signed. ……..

9. Ensure that your tender is submitted by **12H00PM** on the closing date of the tender.

O. R. TAMBO DISTRICT MUNICIPALITY

PROJECT NUMBER: MIS 403 690 A

QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT

- INDEX -

TENDERS ARE HEREBY INVITED FOR:

PROJECT NUMBER: MIS 403 690 A:

QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT

To ensure that your Tender is not exposed to invalidation, documents are to be completed in accordance with the conditions and Tender rules contained in the Tender documents. Supporting documents must be sealed and externally endorsed **PROJECT NUMBER: MIS 403 690 A: QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT** and be submitted in the open tender box, Ground Floor, O. R. Tambo District Municipality, Nelson Mandela Drive, Myezo Park, Mthatha, Eastern Cape, not later than 12H00pm on the **21 June 2023.**

The lowest or any Bid will not necessarily be accepted and the O. R. Tambo District Municipality reserves the right not to consider any tender not suitably endorsed or comprehensively completed as well as the right to accept a Tender in whole or part. Tenders will be adjudicated in accordance with the Supply Chain Management Policy of the O. R. Tambo District Municipality.

The following documents must be completed, signed (where applicable) and submitted as a complete set:

Document		**Colour of pages**
Number	**Heading**	
T1.1	Tender Notice and Invitation to Tender	White
T1.2	Tender Data	Pink
T2.1	List of Returnable Documents	Yellow
T2.2	Returnable Documents for tender evaluation purposes	Yellow
C1.1	Form of Offer and Acceptance	White
C1.2	Contract Data	White
C1.3	Operational Health & Safety Specification	White
C1.4	ORTDM Supply Chain Management Policy	White
C2.1	Pricing Instructions	Yellow
C2.2	Activity Schedule	Yellow
C3	Scope of Works	Blue
C4	Site Information	Green
C5	Additional Relevant Documents	White

TENDER NOTICE AND INVITATION TO TENDER

Tenders are hereby invited from suitably qualified and experienced contractors who are registered with CIDB for the Municipal Infrastructure Grant under the O. R. Tambo District Municipality.

Project Number	Name and Description	CIDB Grading	Briefing session
MIS 403 690 A	QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT	7CE or higher	Mhlontlo Local Municipality: Qumbu Municipal Offices

A compulsory clarification meeting with representatives of the client will take place at **10H00** on Monday, **29 May 2023** at the Mhlontlo Local Municipal Offices- Qumbu before proceeding to site.

THE MUNICIPALITY WILL NOT REPEAT ANY MATTERS ALREADY COVERED IN THE COMPULSORY BRIEFING MEETING TO THE BIDDERS WHO ARRIVE MORE THAN 10 MINUTES LATE TO THE MEETING, NOR WILL IT ALLOW SUCH BIDDERS TO COMPLETE THE ATTENDANCE REGISTER. ANY BID RECEIVED FROM A BIDDER WHO DID NOT ATTEND THE BRIEFING MEETING AND SIGN THE ATTENDANCE REGISTER WILL NOT BE CONSIDERED.

Bid documents should be downloaded on the e-Tender website (www.etenders.gov.za) alternatively on the O. R. Tambo website (www.ortambodm.gov.za) at no cost.

Bids must be completed in black ink, enclosed in a sealed envelope and clearly marked with the **"Project number, project name and description"**, deposited in the Open Tender Box, Ground Floor, O. R. Tambo District Municipality Building, Nelson Mandela Drive, Myezo Park, Mthatha, Eastern Cape, not later than **12H00pm** on **Wednesday, 21 June 2023**.

It must be expressly understood that the Municipality does not accept responsibility for ensuring that bid submissions sent by courier or post, or delivered in any other way, are deposited in the Tender Box. It is therefore preferable for the bidder to ensure that its bid submission is placed in the Tender Box by its own staff or representative(s).

Tender submissions will be opened in public at 12H00pm on Wednesday, 21 June 2023. The Municipality reserves the right not to accept the lowest priced tender or any tender at all, or to accept the whole or part of any tender.

RETURNABLE DOCUMENTS TO BE SUBMITTED WITH BID:

- Copy of business registration documents, as issued by CIPC.
- Certified copy of identity documents of directors/ shareholders/ partners / members, as the case may be.
- Original Valid Tax Clearance Certificate or a Confirmation of Tax Validity with the pin issued by SARS.
- Proof of latest municipal rates and taxes statement **of the bidder** indicating that rates and taxes are not in arrears for more than 3 months.
- Proof of latest municipal rates and taxes statement of each **company director** indicating that rates and taxes are not in arrears for more than 3 months.
- Proof of latest municipal water and sanitation charges statement **of the bidder** indicating that rates and taxes are not in arrears for more than 3 months for bidders who reside in the O. R. Tambo District Municipality area.
- Proof of latest municipal water and sanitation charges statement of each **company director** indicating that rates and taxes are not in arrears for more than 3 months for bidders who reside in the O. R. Tambo District Municipality area.
- Confirmation of address from a ward councillor where the bidder and company directors operate and reside in a peri-urban area where no rates and taxes and service charges are not billed.
- A copy of a valid lease agreement where the bidder does not own the property they are operating from.

NB: CERTIFICATION OF DOCUMENTS MUST NOT BE MORE THAN SIX (6) MONTHS FROM DATE CERTIFIED BY COMMISSIONER OF OATHS.

THE BID WILL BE REJECTED IF THE BIDDER FAILS TO:

- Complete fully the bid document or to provide the information requested, or to sign the bid at the appropriate spaces provided or next to errors.
- Fill and properly sign the form of offer.
- Attach proof of registration with CSD.
- Attach proof of registration with CIDB
- Attach joint Venture Agreement or Consortium Agreement signed and initialled on each page (if applicable).
- Attach audited annual financial statements of the bidding entity (for projects in excess of R10 million);
- Attach unaudited annual financial statements for close corporations and companies if the public interest score is below 350 in line with the companies act of 2008;

EVALUATION OF BIDS IN TERMS OF THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK REGULATIONS, 2022:

Bids will be evaluated in three stages, namely:

- Stage 1 – Compliance with the Bid Rules and other Requirements
- Stage 2 – Minimum conditions of tender
- Stage 3 – Price and Specific goals

Item	Weight
Stage 2 of Evaluation-Minimum conditions of tender	**100**
• Company Experience with respect to similar projects	60
• Qualifications and Experience of key staff assigned to the contract	40
Stage 3 of Evaluation- Price & Specific goals	**100**
• Specific Goal Points	20
• Price	80

CONDITIONS OF THE TENDER WITH REGARDS TO SUB-CONTRACTING

ITS IS THE CONDITION OF THIS TENDER THAT SUCCESSFUL TNDERER MUST SUBCONTRACT A MINIMUM OF 20% OF THE VALUE OF THE CONTRACT TO THE DESIGNATED GROUPS AS INFICATED IN THE TENDER DOCUMENT

Tenders may only be submitted on tender documentation issued. No late, faxed, e-mailed, or other form of tender will be accepted.

Technical enquiries: Mr. N. Noto, telephone number 047 501 6425 or email: nkosiyabon@ortambodm.gov.za.

All Supply Chain Management enquiries may be directed to Mr. S. Hopa, telephone number 047 501 6449 or Email: sakhiwoh@ortambodm.org.za during office hours: Monday to Friday 08H00-13H00 and 13H30-16H30.

Tenders will be evaluated in terms of the Supply Chain Management policy of the O. R. Tambo District Municipality. The lowest tender will not necessarily be accepted and the Municipality reserves right to accept the whole or part of any tender or not to consider any tender not suitably endorsed. An 90/10-pointsystem shall apply where 90 points is allocated for price and 10 points allocated for Specific Goal Points as follows:

The specific goals allocated points in terms of this tender	**Number of points allocated (90/10 system)**
The promotion of enterprises located in a specific province (Eastern Cape): **The Tenderer and Directors are based in the Eastern Cape and pay their municipal rates and taxes**	**05**
The promotion of enterprises located in a specific region (O.R Tambo District): **The Tenderer and Directors are based in the ORTDM region and pay their municipal rates and taxes**	**05**

Tenderers must submit copies of all supporting documents necessary to prove conformance with Specific Goal criteria listed above in order to be eligible for Specific Goal points.

B. B. Matomela
Acting Municipal Manager

T1.2 TENDER DATA

The Standard Conditions of Tender are those contained in the Construction Industry Development Board (CIDB) *Standard for Uniformity in Engineering and Construction Works Contracts (August 2019)* as published in Board Notice 423 of 2019, in Government Gazette No. 42622, on 08 August 2019. (Refer to www.cidb.org.za and/or www.gpwonline.co.za).

The Standard Conditions of Tender Procurement make several references to the Tender Data for details that apply specifically to the Tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of Tender. Each item of data given below is cross- referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

Please note that the word "Client" is used in this document and referred to as "Employer" in the Standard Conditions of Tender document.

Clause Number	
F.1	**General**
F.1.1	The Client is: **O. R. Tambo District Municipality** Private Bag X6043 Mthatha, 5099
F.1.2	The Tender documents issued by the Client comprise: **Tender** T1.1 Tender Notice and invitation to tender T1.2 Tender Data T2.1 List of Returnable Documents T2.2 Returnable Documents for tender evaluation purposes T2.3 Returnable Documents to be incorporated into the contract
	Contract **Part 1 : Agreements and Contract data** C1.1 Forms of Offer and Acceptance C1.2 Contract Data C1.3 Occupational health and safety specification C1.4 O. R. Tambo District Municipality's Health and Safety Specification **Part 2 : Pricing Data** C2.1 Pricing Instructions C2.2 Bill of Quantities
	Part 3 : Scope of Works C3.1 Description of the Works C3.2 Engineering C3.3 Procurement C3.4 Construction C3.5 Management C3.6 Annexures (Specification) **Part 4: Site Information** C4 Site information **Part 5: Additional Relevant Documents**

	Tender Drawings: Book of Drawing issued Separately

F1.3	**Interpretation** The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these tender conditions.	
F.1.4	**Communication:** Communication with all stakeholders shall be through the O. R. Tambo Municipality's Engineering Manager. Communications shall be in the English language. The Employer shall not take any responsibility for non-receipt of communications from or by a tenderer.	
	The Employer is **O. R. Tambo District Municipality** Private Bag x 6043 Mthatha, 5099 Tel: (047) 501 6425 Email: nkosiyabon@ortambodm.gov.za Contact person: Mr. N. Noto	The Employer's Agent is: **Lead Consultant** Nathoo Mbenyane Engineers Address: 87 Beach Road Nahoon, East London Tel: (043) 735 2843 Email: nbriers@nme.co.za Contact Person : Mr N Briers **Sub-Consultant** Name: BM Infrastructure Development 48 Flamingo Drive Southernwood, Mthatha, 5099 Tel: (047) 531 0424 Email: info@bmengineers.co.za Contact Person : Mr A. Tulelo
F.1.5	**The employer's right to accept or reject any tender offer**	
F.1.5.1	**Reject or accept** The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such a cancellation and rejection, but will give written reasons for such action upon written request to do so.	
F.1.6	**Procurement procedures**	
F.1.6.1	A contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.	
F.2	**Tenderer's obligations**	
F.2.1.1	**Eligibility** Only those tenders who are registered with CIDB and have in their employ management and supervisory staff satisfying the requirement of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.	
F.2.1.2	**CIDB Grading** The required CIDB grading for this project is **7 CE** or Higher.	

F.2.2	**Cost of tendering** Accept that the Employer will not compensate the tenderers for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.
F.2.3	**Check documents** Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.2.4	**Confidentiality and copyright** Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.	
F.2.5	**Reference documents** Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.	
F2.6	**Acknowledge Addenda** Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension of the closing time stated in the tender data, in order to take the addenda into account.	
F.2.7	The arrangements for a **compulsory clarification meeting** are:	
	Date: Monday, 29 May 2023 **Starting time:** 10h00	**Location:** Mhlontlo Local Municipal Offices-Qumbu, then proceed to site
F.2.8	**Seek clarification** Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.	
F2.10	**Pricing the tender**	
F.2.10.1	Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.	
F.2.10.2	Show VAT payable by the employer separately as an addition to the tendered total of the prices.	
F.2.10.3	Provide rates and prices that are fixed for the duration of the Contract, and not subject to adjustment except as provided for in the conditions of contract identified in the Contract data.	
F.2.10.4	State the rates and prices in South African Rand	
F2.11	**Alterations to documents** Not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.	
F.2.12	**Alternative tender offers** *Delete the contents of **Clause F.2.12** and replace with the following:* "No alternative offers will be accepted. This includes offering fixed rates in lieu of Contract Price Adjustment and/or changes to the 'as-scheduled' allowance for Contingencies and escalation."	
F.2.13.5	The Client's address for delivery of Tender offers and identification details to be shown on each Tender offer package are:	
	Location of Tender box: Tender Box, Ground Floor, O. R. Tambo District Municipality Building, Nelson Mandela Drive, Myezo Park, Mthatha, Eastern Cape.	
	Physical address: O. R. Tambo House, Nelson Mandela Drive, Mthatha	
F.2.14	**Information and data to be completed in all respects** Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.	
F.2.15	**Closing time** The closing times for submission of Tenders are **12H00pm Wednesday, 21 June 2023.**	
F.2.15	Telephonic, telegraphic, telex, facsimile or e-mailed Bid offers will **not** be accepted.	
F.2.16	**Tender offer validity** The Tender offer validity period is 90 Days as stated in the tender data.	

F.2.17	**Clarification of tender offer after submission** The tenderer shall provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.
F.2.18	**Provide other material** The tenderer shall, when requested by the Employer to do so, Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
F2.20	**Submit securities, bonds, policies** Submit to the employer before formation of the contract, certificates of insurance required in terms of the conditions of contract identified in the contract data.
F.2.23	**The tenderer is required to submit with his tender:** (1) a valid Tax Verification Pin issued by the South African Revenue Services; and (2) Certified copy of the original of all the Companies / CC Registration documents. (3) Joint Venture Agreement where applicable in CIDB format (signed and initialed on each page). (4) Proof of registration with CIDB (5) Certified copies of the original ID of Members of the companies.
F.3	**The employer's undertakings**
F.3.1	**Respond to requests from the tenderer**
F.3.1.1	Respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.
F.3.2	**Issue Addenda** If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until seven days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension tothe closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.
F.3.4	**Opening of tender submissions**
F.3.4.1	The employer shall open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.
F.3.4.2	Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.
F.3.4.3	The Client shall not be obliged to make available the record outlined in F.3.4.2 to any tenderer who fail to attend the tender opening.
F.3.6	**Non-disclosure** The client shall not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.
F.3.7	**Grounds for rejection and disqualification** Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.
F3.9	**Arithmetical errors, omissions and discrepancies**

F.3.9.1	Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
F.3.9.2	Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for: a) the gross misplacement of the decimal point in any unit rate; b) omissions made in completing the pricing schedule or bills of quantities; or c) arithmetic errors in: i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or ii) The summation of the prices.
F.3.9.3	Notify the tenderer of all errors or omissions that are identified in the tender offer and invite thetenderer to either confirm the tender offer as tendered or accept the corrected total of prices.
F.3.9.4	Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows: a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected. b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.
F.3.10	**Clarification of a tender offer** Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F3.11 **Evaluation of tender offers**

Replace the contents of the entire sub-clause with the following:

The procedure for evaluation of responsive tender offers will be Method 2 of table F.1 of SANS 294: 2004. Financial offer & Preferences. The bid will be awarded to the bidder who has scored the highest points for price and preferences combined **BUT** the prerequisite will be to obtain at least **70 points** for minimum conditions of tender which will be explained in Stage 2 below.

Nevertheless, O. R. Tambo District Municipality retains the right to accept any bid.

C. First stage in evaluation: **Compliance with Bid Rules and other Requirements**
The bids will be checked to ensure that they comply with the bid rules and all other requirements of the project document. In particular, the following documentation must be completed and/or included within the bid.

- The form of Offer and Acceptance
- Audited financial statements for any tender price over R10million
- Certified company registration documents and ID of members
- Form C: Compulsory Enterprise Questionnaire
- Form D: Certificate of Authority for Signature
- Form E: Amendments, Qualifications and Alternatives
- Form H: Certificate of Good Standing
- Form I: Relevant experience
- Form J: Details of key staff and CVs
- Form M: Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2022

Note:

- All information supporting the above forms such as Curricula Vitae of staff who will work onthe project and their functions, details of ownership, relevant experience etc.
- Addenda issued during the bid period, if any.
- The pricing schedule

Failure to supply the required information will compromise the bid

D. Next Stage in Evaluation: Minimum conditions of tender; Price & Specific Goals. The next state in the evaluation process will consist of two stages, as follows:

STAGE 2: MINIMUM CONDITIONS OF TENDER EVALUATION

ITEM	WEIGHT
Minimum conditions of tender (see detailed criteria below)	**100**
• Experience with respect to similar projects	60
• Qualifications and Experience of key staff assigned to the contract	40

Only bidders who score ***70 points or more*** on stage 2 will be evaluated further and therefore eligiblefor award.

The maximum score for minimum conditions of tender shall be **100**, distributed as follows:

Tender minimum conditions

	Category of Minimum conditions of tender	Maximum tender evaluation points provided
B1.1	**Experience on similar projects**	**60**
	Experience on similar projects: Proven experience in the construction of projects of similar scope and value i.e**.** reinforced concrete reservoir of at least 2Ml, Wastewater Treatment Plant of at least 0,5Ml/day or any other concrete water retaining structure of at least 2ML**. Copies of Certificate of Completion MUST be submitted with the bid. No points will beawarded where Certificates of Completion have not been submitted with the Bid. If the value of completed project is not reflected on the certificate, provide contractor's appointment letter or letter from the client with values.**	**60**
	The Contractor has successfully completed at least **Four (3)** projects that satisfies the sub-criteria and provided evidence whose total sum ofa value of at least **R70 Million**.	60
	The Contractor has successfully completed at least **Three (2)** projects that satisfies the sub-criteria and provided evidence whose total sum ofa value of at least **R50 Million**.	40
	The Contractor has successfully completed at least **Two (1)** projects that satisfies the sub-criteria and provided evidence whose total sum ofa value of at least **R40 Million**.	20
	Contractor failed to provide evidence of experience or Has not done any Similar projects	0
B1.2	**Qualifications and Experience of key personnel (NB no key personnel member may be assigned more than one duty on the Contract, i.e. different personnel must be assigned for each of the following key positions) Contracts Manager = Minimum ND Civil Engineering/ NQF level 6, Site Agent = Minimum N6 Civil Engineering and Concrete Foreman = Minimum Grade12/ N3 Civil Engineering/ b u i l d i n g . Bidders must submit CV's/Resume and contactable references.**	**40**
	Contracts Manager, Site Agent, Foreman	
	Favourable previous experience in the Civil Engineering field with a minimum of 5 years; **Contracts Manager** = 12 points, 3-4 years = 10 Points & 1-2 years = 8 points.	20
	Favourable previous experience in the Civil Engineering field with a minimum of 5 years; **Site Agent** = 10 points, 3-4 years = 8 points & 1-2 years = 6 points.	12
	Favourable previous experience o n construction sites in the role of Main or Assistant Concrete Foreman on contracts involving in-situ reinforced concrete structures such as reservoirs or other reinforced concrete water retaining structures with aminimum of 5 years; **Concrete Foreman** = 8 points, 3-4 years = 6 points & 1-2 years = 4 points.	8
	Contractor failed to provide evidence of qualification and experience.	0

STAGE 3: EVALUATION FOR PRICE AND SPECIFIC GOALS(90/10)

The procedure for Stage 3 of evaluation of responsive tenders is **Method 2**

a) PRICE 90

b) SPECIFIC GOAL POINTS CONTRIBUTION: 10

a) Points Awarded for Price (Ps)

A total of 90 points will be awarded to the Tenderer with the lowest balanced price. The **other tenders will be awarded points on the ratio to bench mark price as follows**

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

Where
Ps = Points scored for price of bid under consideration
Pt = Rand value of bid under consideration
Pmax = Rand value of highest acceptable bid

b) Points awarded for Specific Goals Contribution

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

The specific goals allocated points in terms of this tender	**Number of points allocated (90/10 system)**
The promotion of enterprises located in a specific province (Eastern Cape): **The Tenderer and Directors are based in the Eastern Cape and pay their municipal rates and taxes**	**05**
The promotion of enterprises located in a specific region (O.R Tambo District): **The Tenderer and Directors are based in the ORTDM region and pay their municipal rates and taxes**	**05**

Tenderers must submit copies of all supporting documents necessary to prove conformance with Specific Goal criteria listed above in order to be eligible for Specific Goal points.

The total calculated points will be rounded to the second decimal place.

F.3.13	**Acceptance of tender offer**
F3.13.1	Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer: a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement, b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract, c) has the legal capacity to enter into the contract, d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
	e) complies with the legal requirements, if any, stated in the tender data, and f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.
F3.13.2	Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.
F.3.14	**Notice to unsuccessful tenderers** After the successful tenderer has acknowledged the employer's notice of acceptance, after written request, the employer will notify the tenderers that their tender offers have not been accepted on the O. R. Tambo District Municipality's website: www.ortambodm.gov.za, by listing the successful tender.
F.3.15	**Prepare Contract documents** If necessary, revise documents that shall form part of the Contract and that were issued by theemployer as part of the tender documents to take account of: a) addenda issued during the tender period, b) inclusion of some of the returnable documents, c) other revisions agreed between the employer and the successful tenderer, and d) The schedule of deviations attached to the form of offer and acceptance, if any.
F.3.16	**Issue final contract** Prepare and issue the final draft of the contract to the successful tenderer for acceptance as soon as possible after the date of the employer's signing of the form of offer and acceptance (including the schedule of deviations, if any).

T2.1 LIST OF RETURNABLE DOCUMENTS

The Tenderer must complete the following returnable documents:

T2.2 Returnable Documents required for Tender evaluation purposes		
1	Form 2.2.1	General Information of the Tenderer
2	Form 2.2.2	Authority for Signatory
3	Form 2.2.3	Schedule of Previous Experience
4	Form 2.2.4	Schedule of Current Projects
5	Form 2.2.5	Declaration of good standing regarding tax
6	Form 2.2.6	Certificate of Attendance at Site Meeting
7	Form 2.2.7	Proposed Key Personnel
8	Form 2.2.8	Schedule Equipment to be used
9	Form 2.2.9	Schedule of Proposed Sub-Contractors
10	Form 2.2.10	Financial References
11	Form 2.2.11	Municipal Bidding Documents (MBD forms)

T2.3 Returnable Documents that will be incorporated into the contract		
1	Form 2.3.1	Record of Addenda to Tender Documents
2	Form 2.3.2	Procurement Form

T2.2 RETURNABLE DOCUMENTS

RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

Form 2.2.1 General Information of Tenderer
Form 2.2.2 Authority of Signatory
Form 2.2.3 Schedule of Previous Experience
Form 2.2.4 Schedule of Current Projects
Form 2.2.5 Declaration of good standing regarding tax
Form 2.2.6 Registration on the Central Supplier Database
Form 2.2.7 Certificate of Attendance at Site Meeting
Form 2.2.8 Proposed Key Personnel
Form 2.2.9 Schedule of Proposed Sub-consultants
Form 2.2.10 Financial References
Form 2.2.11 Municipal Bidding Documents (MBDs)

FORM 2.2.1 GENERAL INFORMATION OF TENDERER

1. Name of Tenderer: .....

2. Contact details

Address : .....

Tel no : .....

Fax no : .....

Cell no : .....

E-mail address: .....

3. Legal entity: Mark with an X.

Sole proprietor	
Partnership	
Close corporation	
Company (Pty) Ltd	
Joint venture	

In the case of a Joint venture, provide details on joint venture members:

Joint venture member	Type of entity (as defined above)

4. Income tax reference number: .....
(in case of a joint venture, provide for all joint venture members)

5. Municipal services area where the enterprise is registered: .....
(in case of a joint venture, provide for all joint venture members)

6. Company / close corporation Registration Number: .....
(in case of a joint venture, provide for all joint venture members)

7. VAT Registration number: .....
(in case of a joint venture, provide for all joint venture members)

8. CIDB registration number: .....
(in case of a joint venture, provide for all joint venture members)

ATTACH THE FOLLOWING DOCUMENTS HERETO

1. For Closed Corporations

   Certified copies of CK1 or CK2 as applicable (Founding Statement)

2. For Companies

   Certified copies of Shareholders register

3. ID copies

   Certified ID Copies for members

4. CIDB registration

   Proof of registration with CIDB

5. CSD registration

   Proof of registration with Central Supplier Database

6. For Joint Venture Agreements

   Copy of the Joint Venture Agreement between all the parties, as well as the certified documents in (1), and or (2) and (4) and (4) of each Joint Venture member.

7. Copy of the latest municipal service account where enterprise is registered

8. Director's / Shareholder's Municipal Rates

9. Specific Goal Points Contribution

10. Central Supplier Database Summary Report

FORM 2.2.2 AUTHORITY OF SIGNATORY

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

A Company	B Partnership	C Joint Venture	D Sole Proprietor	E Close Corporation

A. Certificate for Company

I,……., chairperson of the board of directors of ……, hereby confirm that by resolution of the board (copy attached) taken on……202…., Mr/Mrs……acting in the capacity of… ,was authorised to sign all documents in connection
with this tender and any contract resulting from it on behalf of the company.

As witness

1……. ……

Chairman

2……. ……..

Date

B. Certificate of Partnership

We, the undersigned, being the key partners in the business trading as ……
hereby authorise Mr/Mrs……, acting in the capacity of……to sign all documents in connection with the tender for Contract……and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

C. Certificate for Joint Venture

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

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
Lead partner CIDB registration no …….		Signature : …… Name : …… Designation : ……
CIDB registration no …….		Signature : …… Name : …… Designation : ……
CIDB registration no …….		Signature : …… Name : …… Designation : ……
CIDB registration no …….		Signature : …… Name : …… Designation : ……

A copy of the Joint Venture Agreement showing clearly the percentage contribution of each partner to the Joint Venture shall be appended to this Schedule.

D. Certificate for Sole Proprietor

I, ……., hereby confirm that I am the sole owner of the business trading

as……...

As Witness:

1…….. ……

Signature: Sole owner

2……. …….

Date

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as…… hereby authorise Mr/Mrs……

Acting in the capacity of… ……, to sign all documents in connection with the tender for Contract…… and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

ATTACH HERETO THE DULY SIGNED AND DATED ORIGINAL OR CERTIFIED COPY OF AUTHORITY OF SIGNATORY ON COMPANY LETTERHEAD

FORM 2.2.3 SCHEDULE OF PREVIOUS EXPERIENCE

Provide the following information on relevant previous experience (indicate specifically projects of similar or larger size and/or which is similar with regard to type of work).

Description	Value (R) VAT excluded	Year(s) work executed	Reference		
			Name	Organisation	Tel no

Name of Tenderer: …… Date: ……

Signature: ……...

Full name of signatory: ……

FORM 2.2.4 SCHEDULE OF CURRENT PROJECTS

Provide the following information on current relevant projects. **This information is material to the award of the Contract.**

Description	Value (R) VAT excluded	Date Appointed	Reference		
			Name	Organisation	Tel no

Name of Tenderer: …… Date: ……

Signature: ……...

Full name of signatory: ……

FORM 2.2.5 DECLARATION OF GOOD STANDING REGARDING TAX

SOUTH AFRICAN REVENUE SERVICES	Tender No: …….. Closing Date: ……

DECLARATION OF GOOD STANDING REGARDING TAX

PARTICULARS

1. Name of Taxpayer/Tenderer: .....
2. Trade Name: .....
3. Identification Number: (If applicable) | | | | | | | | | | | | | |
4. Company / Close Corporation registration number: | | | | | | | | | | |
5. Income Tax reference number: | | | | | | | | | | |
6. VAT registration number: (If applicable) | | | | | | | | | | |
7. PAYE employer's registration number: (If applicable) | | | | | | | | | | |
8. Monetary value of Bid:

DECLARATION

I,…… the undersigned, the above taxpayer/Bidder, hereby declare that my Income Tax, Pay-As-You-Earn (PAYE) and Value-Added-Tax (VAT) obligations of the above-mentioned taxpayer, which include the rendition of returns and payment of the relevant taxes:

(i) Have been satisfied in terms of the relevant Acts; or

(ii) That suitable arrangements have been made with the Receiver of Revenue,… to satisfy them.*

…… …… ……

SIGNATURE **CAPACITY** **DATE**

PLEASE NOTE:* **The declaration (ii) cannot be made unless formal arrangements have been made with the Receiver of Revenue with regard to any outstanding revenue/outstanding tax returns.**

ATTACH SARS TAX COMPLIANCE PIN:

FORM 2.2.6 REGISTRATION ON THE CENTRAL SUPPLIER DATABASE

Attach proof of registration with the Central Supplier Database. **This information is material to the award of the Contract.**

ATTACH CERTIFIED PROOF OF REGISTRATION ON THE NATIONAL CENTRAL SUPPLIER DATABASE

FORM 2.2.7 CERTIFICATE OF ATTENDANCE AT SITE MEETING

This is to certify that I,……(Name)

duly authorised representative of ……..…(Tenderer)

Address: ……

Date: ……..

Visited the site on…… (date) in the presence of

……
(Engineer)

I have made myself familiar with the sites and all the local conditions likely to influence the work and the cost thereof.

I further certify that I am satisfied with the description of the work and explanations given by the said Engineer and that I understand perfectly the work to be done, as specified and implied, in the execution of this contract.

REPRESENTATIVE OF EMPLOYER

REPRESENTATIVE OF TENDERER

FORM 2.2.8 PROPOSED KEY PERSONNEL

The Tenderer shall list below the key personne1 (including first nominee and the second choice alternate), whom he proposes to employ on the project should his Tender be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their CV depicting their experience, positions held, their nationalities and certified qualifications.

No	Name	Qualification	Designation	YEARS WITH CURRENT COMPANY

Name of Tenderer: …… Date: ……

Signature: ……...

Full name of signatory: ……

FORM 2.2.9 SCHEDULE OF PROPOSED SUB-CONTRACTORS

NAME OF SUB-CONTRACTOR	FULL DESCRIPTION OF WORK TO BE PERFORMED BY SUB- CONTRACTORS

NB: It is NOT a Condition of Contract that a minimum of 30% of the construction work shall be subcontracted to QSEs and EMEs as contemplated in the 'The Broad-Based Black Economic Empowerment Act (No. 53 of 2003) as amended by B-BBEE Act 46 of 2013 (The Act)'. The Contractor shall take all reasonable and practical measures to support, mentor, train, upskill and supervise such subcontractors as envisaged in the Strategic Objectives of the Amended Construction Sector Code.

Acceptance of this tender shall not be construed as approval of all or any of the listed subcontractors. Should any of the subcontractors not be approved subsequent to acceptance of the tender, this shall in no way invalidatethis tender, and the tendered unit rates for the various items of work shall remain final and binding, even in theevent of a subcontractor not listed above being approved by the Engineer.

Name of Tenderer: …… Date: ……

Signature: ……..

Full name of signatory: ……

FORM 2.2.10 FINANCIAL REFERENCES

FINANCIAL STATEMENTS

I/We agree to furnish an audited copy of the latest set of financial statements together with my/our Directors' andAuditors' report for consideration by the Client.

DETAILS OF TENDERERS BANKING INFORMATION

I/We hereby authorise the Client/Engineer to approach all or any of the following banks for the purposes of obtaining a financial reference:

BANK NAME:	
ACCOUNT NAME: *(e.g. ABC Civil Construction cc)*	
ACCOUNT TYPE: *(e.g. Savings, Cheque etc)*	
ACCOUNT NO:	
ADDRESS OF BANK:	
CONTACT PERSON:	
TEL. NO. OF BANK / CONTACT:	
How long has this account been in existence:	0-6 months ☐ 7-12 months ☐ 13-24 months ☐ More than 24 months ☐ (Tick which is appropriate)

Name of Tenderer: …… Date: ……

Signature: ……...

Full name of signatory: ……

ATTACH AUDITED FINANCIAL STATEMENTS

FORM 2.2.11 MUNICIPAL BIDDING DOCUMENTS (MBD)

MBD 1

PART A
INVITATION TO BID

BID NUMBER:	**MIS 403 690 A**	**CLOSING DATE:**	**21 JUNE 2023**	**CLOSING TIME:**	**12H00**
DESCRIPTION:	**QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT**				

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:

TENDER BOX, GROUND FLOOR, O. R. TAMBO DISTRICT MUNICIPALITY BUILDING

NELSON MANDELA DRIVE

MYEZO PARK

MTHATHA

EASTERN CAPE

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	**CODE**		**NUMBER**		
CELLPHONE NUMBER					
FACSIMILE NUMBER	**CODE**		**NUMBER**		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	**TCS PIN:**			**CSD No:**	
STATEMENT OF RATES AND TAXES OF THE BIDDER	☐ **Yes** ☐ **No**		**STATEMENT OF RATES AND TAXES OF THE COMPANY**	☐ **Yes** ☐ **No**	

[STATEMENT OF RATES AND TAXES OF THE BIDDER AND OF THE COMPANY/ LEASE AGRREEMENT FOR LEASED PROPERTY MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS]

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐**Yes** ☐**No** **[IF YES ENCLOSE PROOF]**	**ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐**Yes** ☐**No** **[IF YES, ANSWER PART B:3]**
TOTAL NUMBER OF ITEMS OFFERED		**TOTAL BID PRICE**	**R**
SIGNATURE OF BIDDER	……	**DATE**	
CAPACITY UNDER WHICH THIS BID IS SIGNED			

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT	**SCM DEPARTMENT**	**CONTACT PERSON**	**Mr. N. Noto**
CONTACT PERSON	**Mr. Sakhiwo Hopa**	**TELEPHONE NUMBER**	**047 501 6425**
TELEPHONE NUMBER	**047 501 6449**	**FACSIMILE NUMBER**	**N/A**
FACSIMILE NUMBER	**N/A**	**E-MAIL ADDRESS**	**nkosiyabon@ortambodm.gov.za**
E-MAIL ADDRESS	**sakhiwoh@ortambodm.gov.za**		

PART B
TERMS AND CONDITIONS FOR BIDDING

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

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

SIGNATURE OF BIDDER: ……

CAPACITY UNDER WHICH THIS BID IS SIGNED: ……

DATE: ……..

MBD 4

DECLARATION OF INTEREST

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

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

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

3.1 Full Name of bidder or his or her representative:……..

3.2 Identity Number: ……..

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

……..

3.4 Company Registration Number: ……..

3.5 Tax Reference Number: ……..

3.6 VAT Registration Number: ……

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

3.8 Are you presently in the service of the state?..... **YES / NO**

3.8.1 If yes, furnish particulars…..……..

……..

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

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

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

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

3.9.1 If yes, furnish particulars.....

.....

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may beinvolved with the evaluation and or adjudication of this bid?. ..... **YES / NO**

3.10.1 If yes, furnish particulars .....

.....

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in theservice of the state who may be involved with the evaluation and or adjudication of thisbid?. ..... **YES / NO**

3.11.1 If yes, furnish particulars.....

.....

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?. ..... **YES / NO**

3.12.1 If yes, furnish particulars .....

.....

3.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?..... **YES / NO**

3.13.1 If yes, furnish particulars.....

.....

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract?. ..... **YES / NO**

3.14.1 If yes, furnish particulars .....

.....

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

Full name	**Identity number**	**State employee number**

....
Signature **Date**

....
Capacity **Name of Bidder**

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

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

NO.	QUESTION	ANSWER (TICK WHICH RESPONSE IS APPLICABLE)	
		YES	NO
1.	Are you by law required to prepare annual financial statements?		
1.1	If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the last 3 years.		

NO.	QUESTION	ANSWER (TICK WHICH RESPONSE IS APPLICABLE)	
		YES	NO
2.	Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than 3 months or any other service provider in respect of which payment is overdue for more than 30 days?		
2.1	If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than 3 months or other service provider in respect of which payment is overdue for more than 30 days.		
2.2	If yes, provide details: …….. …….. ……..		

NO.	QUESTION	ANSWER (TICK WHICH RESPONSE IS APPLICABLE)	
		YES	NO
3.	Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?		
3.1	If yes, provide details: …….. …….. ……..		

NO.	QUESTION	ANSWER (TICK WHICH RESPONSE IS APPLICABLE)	
		YES	NO
4.	Will any portion of the goods of services be sourced from outside the Republic, and if so, what portion, and whether any portion of payment from the municipality is expected to be transferred outside of the Republic?		
4.1	If yes, provide details: ……. ……. …….		

CERTIFICATION

I, THE UNDERSIGNED (NAME) …….
CERIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

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

…… …….

Signature Date

…… ……

Position Name of Bidder

MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

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

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

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1. GENERAL CONDITIONS

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

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

1.2 To be completed by the organ of state

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

b) The highest acceptable tender will be used to determine the accurate system once tenders are received.

c) The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOAL POINTS	10
Total Points For Price and Specific Goal Points	**100**

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

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

2. DEFINITIONS

(a) **"tender"** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;

(b) **"price"** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;

(c) **"rand value"** means the total estimated value of a contract in Rand, calculated at the

time of bid invitation, and includes all applicable taxes;

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

The specific goals allocated points in terms of this tender	**Number of points allocated (80/20 system)**	**Number of pointsclaimed by Tenderer (To be completedby the Tenderer)**
The promotion of enterprises located in a specific province (Eastern Cape): **The Tenderer and Directors are based in the Eastern Cape and pay their municipal rates and taxes**	05	
The promotion of enterprises located in a specific region (O.R Tambo District): **The Tenderer and Directors are based in the ORTDM region and pay their municipal rates and taxes**	05	

The following documents shall be submitted to prove compliance with the aboveSpecific Goals where claimed:

- Copy of business registration documents, as issued by CIPC.
- Certified copy of identity documents of directors/ shareholders/ partners / members, asthe case may be.
- Original Valid Tax Clearance Certificate or a Confirmation of Tax Validity with the pinissued by SARS.
- Proof of latest municipal rates and taxes statement **of the bidder** indicating that ratesand taxes are not in arrears for more than 3 months.

- Proof of latest municipal rates and taxes statement of each **company director** indicatingthat rates and taxes are not in arrears for more than 3 months.
- Proof of latest municipal water and sanitation charges statement **of the bidder** indicatingthat rates and taxes are not in arrears for more than 3 months for bidders who reside inthe O. R. Tambo District Municipality area.
- Proof of latest municipal water and sanitation charges statement of each **company director** indicating that rates and taxes are not in arrears for more than 3 months for bidders who reside in the O. R. Tambo District Municipality area.
- Confirmation of address from a ward councilor where the bidder and company directorsoperate and reside in a peri-urban area where no rates and taxes and service chargesare not billed.
- A copy of a valid lease agreement where the bidder does not own the property they areoperating from

5. DECLARATION WITH REGARD TO COMPANY/FIRM

5.1. Name of company/firm…….

5.2. Company registration number: ……...

5.3. TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

5.4. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;

ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;

iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;

iv) If the specific goals have been claimed or obtained on a fraudulent basis or any ofthe conditions of contract have not been fulfilled, the organ of state may, in additionto any other remedy it may have –

(a) disqualify the person from the tendering process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered asa result of having to make less favourable arrangements due to suchcancellation;

(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

(e) Forward the matter for criminal prosecution, if deemed necessary.

……

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: ……

DATE: ……

ADDRESS: ……

……

……

……

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Municipal Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. willfully neglected, reneged on or failed to comply with any government, municipal or other publicsector contract during the past five years; or
d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention andCombating of Corrupt Activities Act (No 12 of 2004).

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

Item	Question	Yes	No
4.1	**Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with thepublic 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 *audi alteram partem* 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 12of 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 oflaw outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes	No
4.3.1	If so, furnish particulars:	☐	☐
Item	**Question**	**Yes**	**No**
4.4	**Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?**	Yes	No

4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME) .....CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……... **……..**
Signature **Date**

…… **……..**
Position **Name of Bidder**

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

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

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

PROJECT NO.: MIS 403 690 A

QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT

in response to the invitation for the bid made by:

O. R. TAMBO DISTRICT MUNICIPALITY

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 consortium[3] 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 thecontract.

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

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

…… ……..

Signature Date

…….. ……..

Position

Name of Bidder

T2.3 RETURNABLE DOCUMENTS

RETURNABLE DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

Form 2.3.1 Record of Addenda to Tender Documents
Form 2.3.2 Procurement Form

FORM 2.3.1 RECORD OF ADDENDA TO TENDER DOCUMENTS

(Addenda received from Engineer for amendments on Tender Documentation)

	Date	**Title or Details**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Name of Tenderer: …… Date: ……

Signature: ……

Full name of signatory: ……

FORM 2.3.2 PROCUREMENT FORM

Acceptable Tenders will be evaluated using a system that awards points on the basis of Tender price and the meeting of specific goals.

DEFINITIONS

"Acceptable Tender" means any Tender which, in all respects, complies with the conditions of Tender and specifications as set out in the Tender document, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and the Supply Chain Management of Council.

"Council" refers to the O. R. TAMBO DISTRICT Municipality.

"Equity ownership" refers to the percentage ownership and control, exercised by individuals within an enterprise and they are involved in the day to day running of the Company.

"HDI equity ownership" refers to the percentage of an enterprise, which is owned by individuals, or in the case of a company, the percentage shares that are owned by individuals meeting the requirements of the definition ofa HDI.

"**Historically disadvantaged individuals (HDIs)**" means all South African citizens –

(i) Who had no franchise in national elections prior to the introduction of the 1983 and 1993 constitutions(Referred to as Previously Disadvantaged Individuals (PDIs) in this document)
(ii) Women
(iii) Disabled persons.

"SMME's" (small, medium and micro enterprises) refers to separate and distinct business entities, including co-operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996). Refer to the attached addendum for a definition of SMME's for different economic sectors.
Tenders are adjudicated in terms of NDM Procurement Policy, and the following framework is provided as a guideline in this regard.

1. Technical adjudication and General Criteria

- Tenders will be adjudicated in terms of inter alia:
- Compliance with Tender conditions
- Technical specifications

If the Tender does not comply with the Tender conditions, the Tender will be rejected. If technical specifications are not met, the Tender may also be rejected.

With regard to the above, certain actions or errors are unacceptable, and warrants **REJECTION OF THE TENDER**, for example:

- A Tax Verification Pin. (**Only valid tax verification pin** must be attached to the Tender document).
- Pages to be completed, removed from the Tender document, and have therefore not been submitted.
- Failure to complete the schedule of quantities as required
- Scratching out without initialing next to the amended rates or information.
- Writing over / painting out rates / the use of tippex or any erasable ink, eg. Pencil.
- Failure to attend compulsory site inspections
- The Tender has not been properly signed by a party having the authority to do so, according to the **Form 2.2.2 – "Authority for Signatory"**
- No authority for signatory submitted.
- Form of Offer not completed.
- Particulars required in respect of the Tender have not been provided – non-compliance of Tender requirements and/or specifications.
- The Tenderer's attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract.
- The Tender has been submitted after the relevant closing date and time
- Each page of the Contract portion of this Tender document (Part C1 – C4) must be initialed by the authorised person in order for the document to constitute a proper Contract between the Employer (ORTDM) and the undersigned.
- If any municipal rates and taxes or municipal service charges owed by that Tenderer or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months.
- If any Tenderer who during the last five years has failed to perform satisfactorily on a previous contract with the municipality or any other organ of state after written notice was given to that Tenderer that performance was unsatisfactory.

2. Size of enterprise and current workload

Evaluation of the Tenderer's position in terms of:

- Previous and expected current annual turnover
- Current contractual obligations
- Capacity to execute the contract

3. Staffing profile

Evaluation of the Tenderer's position in terms of:

- Staff available for this contract being Tendered for
- Qualifications and experience of key staff to be utilised on this contract

4. Financial ability to execute the contract:

Evaluation of the Tenderer's financial ability to execute the contract. Emphasis will be placed on the following:

- Contact the Tender's bank manager to assess the Tenderer's financial ability to execute the contract and the Tenderer hereby grants his consent for this purpose.

5. Good standing with SA Revenue Services

- Determine whether an original tax pin an original valid tax clearance certificate has been submitted.
- The Tenderer must affix a Tax Verification Pin to page T2.2.9 of the Tender document.

6. Penalties

The O. R. Tambo District Municipality will if upon investigation it is found that a preference in terms of the Contract has been obtained on a fraudulent basis, or any specified goals are not attained in theperformance of the contract, on discretion of the Municipal Manager, one or more of the following penaltieswill be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Tenderer.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, whichwas made in the Tender.
- Restrict the suppliers, its shareholders and directors on obtaining any business from the O. R. Tambo District Municipality for a period of 5 years.

DECLARATION

I/We the undersigned, who warrants that he/she is duly authorised to do so on behalf of the firm, certifies that theitems mentioned in part of the foregoing procurement form and returnable documents qualifies/qualify for the preference(s) shown and acknowledge(s) that:

The information furnished is true and correct.

The contractor may be required to furnish documentary proof to the satisfaction of the O. R. Tambo District Municipality that the claims are correct.

If the claims are found to be inflated, the O. R. Tambo District Municipality may, in addition to any other remedy it may have, recover from the contractor all cost, losses or damages incurred or sustained by the O. R. Tambo District Municipality as a result of the award of the Contract and/or cancel the contract and claim any damages which the O. R. Tambo District Municipality may suffer by having to make less favourable arrangements after such cancellation.

Signature of Tenderer

Signed at_____on_____day of_____202____

_____

For the tenderer

WITNESSES:

1. _____

2. _____

C1 AGREEMENTS AND CONTRACT DATA

FORM C1.1 FORM OF OFFER AND ACCEPTANCE

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works: **PROJECT NUMBER: MIS 403 690 A: QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT**

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

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

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

……**.....**

……**.....**

……**.....** Rand (in words); R ……(in figures).

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

Signature(s) _____

Name(s) _____ _____

Capacity _____

For the tenderer _____
(Name and address of organisation)

Name & Signature
Of Witness

_____ _____
Name Date

ACCEPTANCE

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

The terms of the contract are contained in:

Part 1 Agreements and Contract Data (which includes this Agreement)
Part 2 Pricing Data
Part 3 Scope of WorkPart
4 Site information
Part 5 Additional Relevant DocumentationPart
6 Contract Drawings

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 6 above.

Deviations from and amendments to the documents listed in the Tender Data, including the proposed key personnel and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at or just after the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature(s) _____

Name(s) _____

Capacity _____

For the tenderer _____

(Name and address of Organisation)

Name & Signature
Of Witness _____ _____

Name Date

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.

2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid becomes the subject of agreements reached during the process of Offer and Acceptance; the outcome of such agreement shall be recorded here.

3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract, shall also be recorded here.

4. Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

1 Subject _____

Details _____

2 Subject _____

Details _____

3 Subject _____

Details _____

4 Subject _____

Details _____

5 Subject _____

Details _____

6 Subject _____

Details _____

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the Offer agreed by the Tenderer and the Employer during this process of Offer and Acceptance. It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract betweenthe parties arising from this Agreement.

FOR THE TENDERER:

Signatures (s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
(Name and address of Organisation)

Name & Signature
Of Witness _____ Date _____

FOR THE EMPLOYER

Signatures (s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____
(Name and address of Organisation)

Name & Signature
Of Witness _____ Date _____

FORM C1.2 CONTRACT DATA

PART C1.2 DATA PROVIDED BY THE EMPLOYER

Notes to Tenderer:

1. The Tenderer is not required to complete this data in full.
2. Please read both the General Conditions of Contract for Construction Works, Third Edition, 2015. (GCC 2015) and the relevant parts of its Guidance Notes to understand the implications of this Data which the tenderer is required to complete.
3. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering www.saice.org.za
4. The number of the clause which requires the data is shown in the left-hand column for each statement; however, other clauses may also use the same data
5. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract for Construction Works to which it mainly applies.
6. The General Conditions of Contract for Construction Works make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks,liabilities, and obligations of the contracting parties and the procedures for the administration of theContract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.
7. The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Data below. Each item of data given below is cross-refenced to the clause in the General Conditions of Contract to which it mainly applies
8. The following contract specific data are applicable to this Contract:

Clause	Statement	Data
	The *conditions of contract* are	The General Conditions of Contract forConstruction Works, Third Edition, 2015. (GCC 2015)
1		**General**
1.1.1.13	*Defects Liability Period* is	**12 months** after the Practical Completion Date
1.1.1.14	*Due Completion Date* is	**As tendered (not to exceed 46 weeks)** from the access date (as described inclause 5.4.1)
1.1.1.15	The *Employer* is	O. R. Tambo District Municipality
1.1.1.16	The *Employer's Agent*	To which this *Contract* relates shall be the delegated individual specified in writing by the Employer within seven days of the commencement date.
1.1.1.17	The *Employer's Agent Representative*	To which this *Contract* relates shall be the delegated individual specified in writing by the Employer's Agent within seven (7) days of the commencement date.
1.1.1.26	The *Pricing Strategy* is	A *re-measurement contract*
1.1.1.29	The *Site is*	All villages within the boundaries of **Qumbu Town and the Sewer Treatment Plant** sites. Refer to Part C3.1, Clause PS2.1
1.1.1.30	The *Site Information* is	Specified in Part C4: Site Information of this document

3		**Employer's Agent**
3.2.3	1. The *Employer's Agent* shall first consult and obtain specific approval all the *Employer Agent's* actions ascontemplated in Clause 6.4.1 all the	from the *delegated* ***Lead Consultant, Nathoo Mbenyane and Associates and,*** ***Sub-Consultants are BM Infrastructure Engineers*** prior to executing any of its functions or duties, with respect to following clauses: 2. all the *Employer Agent's* actions as contemplated in Clause 3.3.1 3. all the *Employer Agent's* actions as contemplated in Clause 3.3.4 4. all the *Employer Agent's* actions as contemplated in Clause 5.11.1 5. all the *Employer Agent's* actions as contemplated in Clause 5.12.4 6. *Employer Agent's* actions as contemplated in Clause 10.1.5 7. all the *Employer Agent's* actions as contemplated in Clause 10.2.3
3.2.4	The *Employer's Agent* for Health and Safety	To which this Contract relates shall be the delegated individual specified in writing by the Employer's Agent within seven days of the commencement date.
3.2.4	The *Employer's Agent* for Social Facilitation	To which this Contract relates shall be the delegated individual specified in writing by the Employer's Agent within seven days of the commencement date.
5		**Time and Related Matters**
5.1.1	The special non-working days set out in the *Contract* are	the following: 1. South African Public Holidays, and 2. Annual builders' holiday traditionally starts on or around 15 December and ends in the second week of January.
5.3.1	The *Engineer's Agent* shall issue an *instruction* to the Contractor to commence with the Work	On approval of the following documentation: 1. Health and Safety Plan 2. OHS Agreement 3. Department of Labour (DoL) notification of construction work 4. Initial Programme 5. Letter of Good Standing 6. Performance Guarantee 7. Insurance for the Works 8. Contractor's Key Personnel Which will be within 14 days after the approval of the Documentation required from the Contractor
5.3.2	The Contractor is to submit the documentation stipulated in clause 5.3.1	Within 14 days of the Commencement Date
5.4.1	Access to and possession to the Site	is granted on the date of the site handover meeting which should occur no later than Fourteen (14) days after Employer's Agent's instruction to commence carrying out the Works referred to in Clause 5.3.1.

1.1.1.33	The *Works* are	Specified in Part C3: Employer's Works Information of this document
1.2.1	**The *Employer's* delivery address is**	
	Physical Address	O. R. Tambo House Nelson Mandela Drive Mthatha 5100
	Postal Address	Private Bag X 6043 Mthatha 5100
	Email Address	Shall be specified by the *Employer* within Fourteen days of the commencement date.
1.2.1	The *Employer's* Agent's delivery address	**Lead Consultant** Nathoo Mbenyane Engineers Address: 87 Beach Road Nahoon, East London Tel: (043) 735 2843 Email: nbriers@nme.co.za Contact Person : Mr N Briers **Sub-Consultant** Name: BM Infrastructure Development 48 Flamingo Drive Southernwood, Mthatha, 5099 Tel: (047) 531 0424 Email: info@bmengineers.co.za Contact Person : Mr A. Tulelo
1.3.2	The law of the contract is the law of	the Republic of South Africa that applies to agreements executed and wholly performed within the Republic of South Africa
1.3.3	The *language of this Contract* is	English
5.8.1	The non-working days set out in the *Contract* are	weekends
	The special non-working days set out in the Contract are	the following: 1. all South African gazetted public holidays, and 2. Annual builders' holiday traditionally starts on or around 15 December and ends in the second week of January. The year-end builders' holiday does not exceed 15 working days in duration
5.12.2.2	Extension of time for practical completion due to abnormal climatic conditions.	Add the following to the end of ***Clause 5.12.2.2***: "Extension of time resulting from abnormal weather will be calculated as per the provisions stated in C3.1: Project Specifications Clause PS 6.9."

5.13.1	The penalty for delay or late completion is	If the Contractor fails by the Due Completion Date to complete the Works, or any specific portion thereof that is identified in the Scope of Works to the extent which entitles him in terms of Clause 5.14.2 to receive a Certificate of Practical Completion for the Works, then the Contractor shall be liable to the Employer for the sum(s) stated below as (a) penalty/ies for every day which shall elapse between the Due Completion Date for the Works or the specific portion of the Works and the actual Date of Practical Completion of the Works or of the specific portion. The penalty for delay shall be **R5 000 or 0.02% of the Contract Value (excluding VAT) per day**; **whichever is the higher value**."
6		**Payment and related matters**
6.2.1	***The performance guarantee*** for liability of the *Contractor* for claims made against the *Contractor* arising out of the *Contractor's* failure to deliver the requested *Works* per the standards, practices, methods and procedures conforming to applicable laws and exercising that degree of skill, care, diligence, prudence and foresight thatwould reasonably and ordinarily be expected from a skilled and experienced person engaged in a similar type ofundertaking under similar circumstance is	***10% of the Contract Price***
6.2.2	The security of ten percent retention of thevalue of the Works	*Shall be deducted from the Contractor's first* three *payment certificates in equal increments as per the SCM Policy.*
6.8.2	Contract Price Adjustment Factor	is not applicable for this contract
6.10.1.5	The advance payment percentage limit for plant and materials delivered to *Site* but not yet built into the *Permanent Works* is	***80% of the value of the materials***.
6.10.1.5	The advance payment percentage limit for plant and materials not yet supplied to Site	is not applicable for this contract
6.10.3	The percentage retention is	***10% of the value of the Works***
6.10.3	The limit of retention money is	***5%*** *of the value of the Contract Price (Including VAT)*
8		**Risks and related matters**
8.6.1.1.2	The value of plant and materials supplied by the Employer to be included in the insurance sum is	NIL
8.6.1.3	The minimum limit of indemnity for insurance in respect of loss of or property damage (except for the *Works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this *Contract* for any one event is:	R5,000,000
8.6.1 .5	a) The minimum limit of indemnity for insurance in respect of loss of or damage to the Works, Plant and Materials	The replacement cost thereof.

	b) The minimum limit of indemnity for insurance in respect of the death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment inconnection with this *Contract* for any one event is	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the *Contractor's* common-law liability for people falling outside the scope of the Act with a limit of indemnity of not less than R1 000 000 (One Million South African Rand).
10		**Claims and disputes**
10.5.3	The Adjudication Board shall consist of	one (1) member
10.7.1	The determination of disputes shall be by arbitration	
10.7.2	The arbitration procedure is	the latest edition of Rules for the Conduct of Arbitrations published by the Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	Mthatha
	The person who shall choose an arbitrator	the Chairman of the Association of Arbitrators (www.arbitrators.co.za) or its successor body.

PART C1.2.3 DATA PROVIDED BY THE *CONTRACTOR*

Notes to Tenderer:

9. The Tenderer is required to complete this data in full.
10. Please read both the General Conditions of Contract for Construction Works, Third Edition, 2015. (GCC 2015) and the relevant parts of its Guidance Notes to understand the implications of this Data which the tenderer is required to complete.
11. The number of the clause which requires the data is shown in the left-hand column for each statement; however, other clauses may also use the same data

CLAUSE	STATEMENT	DATA
	The *conditions of contract* are	The General Conditions of Contract for Construction Works, Third Edition, 2015. (GCC 2015)
1		**General**
1.1.1.9	*The Contractor* is	_____ _____
1.2.1	The Contractor's delivery address is Physical Address	_____
		_____
	Postal Address	_____
		_____
	Email Address	_____
4		**Contractor's General Obligations**
4.4.2	The *Contractor* must Sub-Contract any parts of the Contract.	To which this Contract relates shall be the ***minimum of 20% of the Value of the Works*** that must be Sub-Contracted to a Local SMME or the Designated Groups as agreed during the Procurement of the Sub-Contractors.
4.10.2	Contractor shall provide monthly reports outliningcompliance with	Site progress and Employer's CPG and EPWP objectives at intervals specified in Part C3: Employer's Works Information of this document.
4.11.1	*Contractor*'s Competent Employees are:	
	Title	**Construction / Contract Manager**
	Name	_____
	Qualifications	_____
	Tel No	_____
	Email	_____
		_____

Title **Site Agent**

Name _____

Qualifications _____

Tel No _____

Email _____

_____

Title **Concrete Foreman**

Name _____

Qualifications _____

Tel No _____

Email _____

_____

Title **Safety Officer**

Name _____

Qualifications _____

Tel No _____

Email _____

_____

SACPMP Registration Number _____

Should the Contractor decide to use other Personnel rather than the one's listed above, must do it in writing, and the proposed Personnel must have the same or very similar Qualifications and experience

Security

6.2.1 The security to be provided by the Contractor shall be one of the following:

Type of security	**Select (Tick)**
1. Cash Deposit of 10% of the Contract Sum plus retention of 5% of the value of Works	
2. Fixed Performance Guarantee of 10% of the Contract Sum plus retention of 5% of the value of Works	

Note A

The **Performance Guarantee** shall be of an Insurance Company listed on the Johannesburg Stock Exchange or owned by such a company, a Registered South African Bank or a recognised government sponsored, provincial or national development agency

Part C1.4 Special Conditions of Contract

Notes to Tenderer:

1. Particular Conditions of the Contract defines conditions that are specific to a Project.
2. The Particular Conditions of the Contract are used for addition/ omission and change of GeneralConditions of the Contract.
3. The number of the clause which requires the data is shown in the left-hand column for eachstatement; however, other clauses may also use the same data

Clause	Statement	Data
		Amendment of GCC 2015 Clauses
	Employer's SCM Policy	
	Insertion of additional clause	The parties agree that this contract shall be subject to the Employer's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the bid was advertised. Abuse of the supply chain management system is nopermitted and may result in cancellation of the contract, restriction of the supplier, and/or the exercise by the Employer of any other rights and remedies available to it as described in the SCM Policy
	Ambiguity and discrepancy	
	Insertion of additional wording:	All parts of the Contract should be read together and that their original purpose is to be mutually explanatory. However, if there is a discrepancy between the informationprovided, the order of priority of contract documents is as stated below: 1. the Contract Agreement 2. the Letter of Acceptance (this is the formal acceptanceof the contractor's tender and usually presents the pointin time when Contractual Parties enter the Contract), 3. the Contract Data, 4. the Particular Conditions of the Contract 5. the General Conditions of the Contract, 6. the Specification, 7. the Drawings, and 8. the Schedules and any other document forming part ofthe Contract In the event of a discrepancy or ambiguity, the documentof higher priority takes precedence.
	Assignment	
	Delete wording and replace with thefollowing:	The Employer will, at all times, be entitled to cede its rightsand/or delegate its obligations under this Contract and/or assign this Contract to any financier and/or nominee of anyfinancier of the Employer for purposes of the programme. Any cession and/or delegation and/or assignment by the Employer to any such financier or nominee of any financieris expressly permitted. The Contractor shall, if requested thereto by the Employer and/or any such financier, sign a separate authority giving effect to the aforementioned in such form as the Employer and/or any financier of the Employer may reasonably require

The Employer will, at all times, be entitled to cede its rights and/or delegate its obligations under this Contract and/or assign this Contract to any financier and/or nominee of any financier of the Employer for purposes of the programme. Any cession and/or delegation and/or assignment by the Employer to any such financier or nominee of any financieris expressly permitted. The Contractor shall, if requested thereto by the Employer and/or any such financier, sign a separate authority giving effect to the aforementioned in such form as the Employer and/or any financier of the Employer may reasonably require

The Contractor shall not be entitled to cede any of its rights and/or delegate any of its obligations under this *Contract* to any person without the prior written consent of the *Employer*.

Access to and possession of Site

Insertion of additional wording:

The Employer allows access to, possession and use of each part of the Site to the *Contractor, which* is necessary for the work included in this contract. The *Employer* shall grant access and use of the Site no later than seven days after *Employer's Agent's* instruction to commence with the Works.

If the *Employer* does not give the *Contractor* access to, possession and use of the *Site* within seven days of the *Employer's Agent* instruction to commence with the Works, access to, possession and use of the *Site* shall be as the date when *Employer's Agent* instructed the *Contractor* to commence with the Works.

Some reasons for extension of time

Insertion of additional wording:

No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normalclimatic conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However, in the eventthat delays to critical activities exceed the number of working dates listed below for each month, then abnormal climatic conditions shall be deemed to exist, and an extension of time may be claimed in accordance with the provisions of clause 5.12

The number of days quoted C3.1 Clause PS6.9 shall be regarded as fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work

Claims for delays for abnormal climatic conditions shall be accompanied by substantiating facts and evidence, which shall be submitted timeously as each day or half-day is experienced.

It shall be noted that where the critical path is not affected,no extension of time for abnormal climatic conditions or forany other reason will be considered.

Termination by the Employer

Insertion of additional wording

9.2.1.3.9 Has substantially broken a health or safety regulation.

9.2.1.3.10 Failure to obtain access to Site due to non – compliant documentation as stated in clause 5.3.1

9.2.1.3.11 Has failed to provide or update the required insurances within the prescribed time

9.2.1.4 Where the *Works* are no longer required

9.2.1.5 Where the funding for the *Works* is no longer available

9.2.1.6 An event occurs that stops the Contractor from completing the works by the date shown on the Accepted Programme and is forecast to delay Completion by more than13 weeks

9.2.1.7 The Service Provider becomes insolvent or Liquidated

9.2.1.8 If as a result of Force Majeure, the Service provider is unable to perform part or the whole service for a period of thirty 30 days.

Right of Retention

The *Contractor* hereby waive and abandons any and all lien and/or any other right of retention that the *Contractor* now has or in future may have, in terms of the Contract, the common law or otherwise, in respect of the works, the Site or any property belonging to the *Employer* and shall under no circumstances be entitled to withhold delivery of the same to the *Employer*. The Contractor warrants that all Subcontractors shall, mutatis mutandis, waive and abandon any suchSubcontractor's lien or any other right of retention, in favor of the *Employer*.

Joint Ventures

Suppose the *Contractor* constitutes a joint venture, consortium, or other unincorporated groupingsof two or more persons or organizations. In that case, these persons or organizations are deemedto be jointly and severally liable to the *Employer* for the performance of this *Contract*.

Unless already notified to the *Employer*, the persons or organizations notify the *Employer's* Agentwithin two weeks of the date of acceptance of the Contract of the key person who has the authorityto bind the *Contractor* on their behalf.

The *Contractor* does not alter the composition of the joint venture, consortium, or other unincorporated groupings of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

Nothing in this Contract shall be deemed to create any joint venture, partnership or principal-agent relationship between the Parties and neither Party shall hold itself out in its advertising or otherwisein any manner which would indicate or imply such relationship with the other Party according to this Contract

The dissolution of the *Joint Venture* shall be deemed as a separation and that constitutes the Contract to be Terminated.

Illegal or Corrupt Practices

Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutesor could be construed either directly or indirectly as an illegal or corrupt practice, an inducement or reward for the award or in the execution of this *Contract* constitutes grounds for terminating the*Contractor's* obligation to Provide the Works or taking any other action as appropriate against the*Contractor* (including civil or criminal action).

The Employer may terminate the *Contractor's* obligation to provide the Works if the *Contractor* (or any member of the *Contractor* where the *Contractor* constitutes a joint venture, consortium or other unincorporated groupings of two or more persons or organizations), or a director of any suchentity, is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

SCC4.3 Such practices include, but are not limited to, the making of offers, payments, considerations, or benefits of any kind or otherwise, whether in connection with any procurement process or contractwith the Employer or other people or organizations and including in circumstances where the *Contractor* or any such member is removed from the approved vendor database of the *Employer*as a consequence of such practice.

Confidentiality

The *Contractor* does not disclose or make any information arising from or in connection with this *Contract* available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the publicdomain or to information which was already in possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* discloseinformation to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Any information communicated by the *Employer* to the *Contractor* in connection with the Contractand any secret and/or confidential information of the *Employer* otherwise acquired by the*Contractor* shall be regarded by the *Contractor* as strictly confidential and shall not, without the prior written consent of the *Employer* in each instance, be published or disclosed to any other party or be used for any purpose whatsoever other than to execute the Works.

If the *Contractor* is uncertain about whether any such information is confidential, it is to be regardedas such until notified otherwise in writing by the *Employer's Agent*.

Suppose the Contractor is, at any time, required by law to disclose any such information which isrequired to be kept confidential. In that case, the *Contractor*, to the extent permitted by law beforedisclosure, notifies the *Employer* so that an appropriate protective order and/or any other action can be taken if possible, before any disclosure. If such protective order is not, or cannot, be obtained, then the *Contractor* may only disclose that portion of the information which it is requiredto be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment shall be afforded to the information so disclosed.

The taking of images (whether photographs, video footage or otherwise) of the works or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Employer's Agent*. All rights in and to all such images vests exclusively in the *Employer*.

The Contractor ensures that all his subcontractors abide by the undertakings in this clause.

Existing Services and Housekeeping

The Site may be in continuous operation and, accordingly, the *Contractor* shall assume that existing services and access ways shall be in continuous use and fully operational at all times.

The Contractor shall be held responsible for repair or making good of existing installations that may be required due to any act or omission of whatever nature by the *Contractor* and for any coststo the *Employer* which may arise, due to the *Contractor* preventing in any manner whatever the normal operation and use of such services and access ways.

In the execution of the Works, the *Contractor* shall keep the Site reasonably free from all unnecessary obstructions and shall store or dispose of any *Contractor*'s Equipment and surplus materials and without delay clear away and remove from the Site any wreckage, rubbish or temporary works no longer required.

The *Contractor* must use and/or attend to all areas of the Site which are used by it or under its control from time to time in a safe, professional and responsible manner.

The Contractor shall be responsible for all areas of the *Site* which are used by it or under its controlfrom the time the area in question is made available to the *Contractor* until the time the *Employer*requires the *Site* to be returned to it or otherwise when the *Contractor* demobilises from the area of the *Site* in question and returns to the *Employer* all of the *Employer's* property.

The *Contractor* must ensure that all such areas of the *Site* are kept at all times in a safe, clean and hygienic condition and in good working order and repair and the *Contractor* shall promptly repair, at its cost, any damage to the *Site* which is attributable to the *Contractor* or its employeesof sub-contractors, failing which the *Employer* shall be entitled to repair the *Site* and recover the cost of such repairs from

the *Contractor*.

Any damages suffered by the *Employer* as aforesaid shall be paid by the *Contractor* within tenbusiness days or shall be set off against any amounts owing to the *Contractor* by the *Employer*.

Any damages suffered by the *Community or Resident* as aforesaid shall be paid by the *Contractor* within ten business days or shall be set off against any amounts owing to the *Contractor* by the *Employer*.

The *Contractor* shall not unnecessarily interfere with the operations of the *Employer* or Others atthe *Site*. The *Employer* has the right to refuse access to the *Site* to any of the *Contractor's* employees, representatives and/or subcontractors whom it suspects of being a health and safetyor other risk.
The Contractor shall not have any lien or right of retention in respect of the *Site*, the *works* and/orany other property belonging to the *Employer*.

Indemnity against *Contractor*'s Design

The *Contractor* indemnifies and keeps indemnified the *Employer* against any losses and costs, including legal costs between attorney and client, and all other expenses whatsoever that the *Employer* may incur as a result of any action, proceeding or claim made against the *Employer* arising from the use of a design constituting an infringement of patent rights, design registration, registered trademarks or other exclusive rights in respect thereof. This indemnity does not apply to any infringement which is solely due to the *Contractor* having followed in its entirety instructionsstipulated by the *Employer*.

The *Employer* shall give the *Contractor* prompt notice of any such action, proceeding, claim orthreat instituted or made against it or both of them. Promptly after the giving of such notice the

Parties are to consult together about the subject of the notice and the *Employer* may at its optiondecide to a) permit the Contractor at the *Contractor*'s own expense to conduct any litigation that may ensue and all negotiations for a settlement of such litigation or claim with the proviso that the*Contractor* keeps the *Employer* informed of all steps that are taken and of the outcome; or b) conduct any litigation that may ensue and all negotiations for a settlement, in which event the *Employer* shall act in consultation with the *Contractor* and shall keep the *Contractor* informed of all aspects that are taken and of the outcome.

The *Contractor* hereby cedes and agrees to cede all intellectual property, excluding intellectual property in respect of which the *Contractor* can demonstrate proprietorship prior to the date of signature hereof, but including intellectual property specifically developed by the *Contractor* on behalf of the *Employer* under instruction and payment by the *Employer* and including all current and future technical information relating to the works; technical concepts; know-how; specifications; data; formulae; computer programs; design; patent and / or applications in respect thereof; copyrighted works; memoranda; scripts; reports; manuals; diagrams; drawings; includingengineering drawings; prototypes; drafts in performing the works, whether completed or not and whether accepted, amended or rejected, and the like relating to the works, whether patented or not, and includes all intellectual property relating to the works developed by or on behalf of the *Employer*, to the *Employer*, its successors, assigns or legal representatives locally and / or internationally, together with the right to apply for Letters Patent in respect thereof.

It is further agreed that the *Employer* may apply in its name and its own cost for Letters Patent in respect of such inventions and registration of such designs locally and/or internationally.

The *Contractor* hereby agrees that when requested, he shall without any charges to the *Employer*,but at the latter's expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable or convenient for securing and maintaining patents relating to the works and/or the patent applications in any and all countries and for vesting titled thereto in the *Employer*, its successors, assign or legal representatives and the *Contractor* confirms and agrees that he shall assist the *Employer* to ensure that total and complete cession and transfer of all right, title and interest in the intellectual property takes place.

Time

The *Contractor* acknowledges that time is of the essence to the performance of its obligations interms of this Contract.

Discovery/Reproduction of Documentation

The *Contractor* hereby authorises the *Employer* to reproduce all documentation made available by the *Contractor* to the *Employer* in connection with this *Contract*. In so far as the *Contractor* hasany

copyright protection in the items that are so reproduced by the *Employer*, the *Contractor* hereby grants a right and license to the *Employer* to reproduce the same for the purposes specifiedin this *Contract*. The *Contractor* keeps the *Employer* informed of any threats or claims made against it in respect of infringement of patent or other exclusive rights by virtue of the provision ofthe works.

Damages

The *Employer* shall be entitled, in its sole discretion, to claim and recover from the *Contractor* damages *in lieu of* any penalty agreed upon in terms of this *Contract*.

Accrual

Unless otherwise provided *herein*, rights which accrue to a Party in terms of this *Contract* shall survive its termination.

Commitments and Undertakings

Neither Party shall be bound by any express, tacit or implied term, representation, warranty, promise nor the like not recorded *herein*. This *Contract* supersedes and replaces all prior commitments, undertakings or representations, whether oral or written, between the Parties in respect of the subject matter hereof.

Validity and Enforceability of *Contract*

If any provision of this *Contract* is found to be invalid, unlawful or unenforceable, that provision shall be severable from the remaining provisions of this *Contract*, which shall continue to be validand enforceable.

Strategic Socio-Economic Objectives

in terms of which the *Contractor* gives unconditional warranties and undertakings committing itself to the promotion of the strategic socio-economic objectives stipulated herein, including, but not limited to, warranties and undertakings to the effect that the BEE information disclosed to the *Employer* in the bid response to the Tender Invitation

pursuant to which it was appointed, as supplemented subsequently in writing, is accurate andcomplete and that it shall maintain at least those levels of BEE for the duration of the contract;

it shall only subcontract aspects of the Works to Subcontractors with which it has concluded Subcontracts and actively take steps towards achieving the *Employer*'s CPG requirements for theempowerment of Subcontractor/s

it shall ensure that the execution of the *Works* and the expenditure of the project costs results inthe achievement of the general socio-economic and empowerment objectives

it shall keep detailed records of –

its equity ownership and control and, where applicable, that of its duly appointed Subcontractors and/or suppliers.

a) its total spends on targeted enterprises used to fulfil its obligations in terms of the *contract*.
b) any transformation programmes and/or initiatives relating to skills development and transfer, employment equity and enterprise development of the Subcontractors and Target Individuals; and
c) any public benefits and/or job opportunities created according to the fulfilment of its obligationsin terms of the *contract* and provide monthly reports outlining compliance with such objectivesto the *Employer*;

Contractor Obligations

in terms of which the *Contractor* unconditionally warrants and undertakes that, in its performanceof its obligations under the *Contract*, it shall, at all times, -

owe a duty of care to the ORTDM and comply with the reasonable directions issued to it by the

Employer, *Employer's Agent* and/or *Employer's Agent Representative*;
not do anything that constitutes, or is reasonably likely to constitute, a corrupt act or that isotherwise intended or is likely to harm the reputation of the ORTDM, the Contract; and

Undertake the *Works* in accordance with the standards, practices, methods and procedures conforming to applicable law, and exercising that degree of skill, care, diligence, prudence and foresight that would reasonably and ordinarily be expected from a skilled and experienced personengaged in a similar type of undertaking under similar circumstances.

FORM OF GUARANTEE

PERFORMANCE GUARANTEE

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

Physical address: .....

"Employer" means: **O. R. TAMBO DISTRICT MUNICIPALITY**

"Contractor" means: .....

"Employer's Agent" means: **GIBB (Pty) Ltd**

"Works" means: **QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT**

"Site" means: The Site as defined by clause 1.1.1.29 of the General Conditions of Contract, 2015.

"Contract: means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of R .....

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R .....

Amount in words: .....

Type of Performance Guarantee: **FIXED** *(Insert Variable or Fixed)*

"Expiry Date" means: ..... *(Give date which should not be earlier than the anticipated date of issue of the Certificate of Completion)* or any other later date set by the Contractor and/or Employer provided such instruction is received prior to the Expiry Date as indicated here.

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate of Completion of the Works as defined in the Contract.

1. VARIABLE PERFORMANCE GUARANTEE

1.1 Where a Variable Performance Guarantee has been selected, the Guarantor's liability shall be limited during the following periods to diminishing amounts of the Guaranteed Sum as follows :

1.1.1 From and including the date of signing the Performance Guarantee up to and including the date of the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum:

R .....

(Amount in words)

1.1.2 From the day following the date of the said interim payment certificate up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, whichever occurs first:

R .....

(Amount in words)

1.2 The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum, has been issued and the date on which the Certificate of Completion of the Works has been issued.

2. FIXED PERFORMANCE GUARANTEE

2.1 Where a Fixed Performance Guarantee has been selected, the Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2.2 The Guarantor's period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.

2.3 The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. CONDITIONS APPLICABLE TO VARIABLE AND FIXED PERFORMANCE GUARANTEES

2.1 The Guarantor hereby acknowledges that:

2.1.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship

2.1.2 Its obligation under this Performance Guarantee is restricted to the payment of money.

2.2 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 3.2.1 to 3.2.3:

2.2.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 3.2.2;

2.2.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 3.2.1 and the sum certified has still not been paid;

2.2.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified 3.2.

2.3 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

2.3.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 3.3; or

2.3.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 3.3; and

2.3.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

2.4 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 3.2 and 3.3 shall not exceed the Guarantor's maximum liability in terms of 1.1 or 2.1.

2.5 Where the Guarantor has made payment in terms of 3.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

2.6 Payment by the Guarantor in terms of 3.2 or 3.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

2.7 Payment by the Guarantor in terms of 3.3 will only be made against the return of the original Performance Guarantee by the Employer.

2.8 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may consider fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

2.9 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

2.10 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2 or 2.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

2.11 This Performance Guarantee, with the required demand notices in terms of 3.2 or 3.3, shall be regarded as a liquid document for the purposes of obtaining a court order.

2.12 Where this Performance Guarantee is issued in the Republic of South Africa, the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

SIGNED AT:……

GUARANTOR (1)	**SIGNATURE**
DATE	**CAPACITY**
GUARANTOR (2)	**SIGNATURE**
DATE	**CAPACITY**
WITNESS (1)	**SIGNATURE**
WITNESS (2)	**SIGNATURE**

FORM C1.3 SPECIAL CONDITION

Payment for the labour-intensive component of the Works

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

Applicable labour laws

The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

1 Introduction

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT applyto persons employed in the supervision and management of a SPWP.

1.2 In this document –

(a) "**Department**" means any department of the State, implementing agent or contractor;

(b) "**Employer**" means any department, implementing agency or contractor that hires workers to work inelementary occupations on a SPWP;

(c) "**Worker**" means any person working in an elementary occupation on a SPWP;

(d) "**Elementary** occupation" means any occupation involving unskilled or semi-skilled work;

(e) "**Management**" means any person employed by a department or implementing agency to administeror execute an SPWP;

(f) "**Task**" means a fixed quantity of work;

(g) "**task-based work**" means work in which a worker is paid a fixed rate for performing a task;

(h) "**task-rated worker**" means a worker paid on the basis of the number of tasks completed;

(i) "**time-rated worker**" means a worker paid on the basis of the length of time worked.

(j)* "Task rate or daily rate" = *As per Government Gazette

2 Terms of Work

2.1 Workers on a SPWP are employed on a temporary basis.
2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.
2.3 Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

3 Normal Hours of Work

3.1 An employer may not set tasks or hours of work that require a worker to work–

(a) More than forty hours in any week
(b) On more than five days in any week; and
(c) For more than eight hours on any day.

3.2 An employer and worker may agree that a worker will work four days per week. The workermay then work up to ten hours per day.

3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete thetasks allocated (based on a 40-hour week) to that worker.

4 Meal Breaks

4.1 A worker may not work for more than five hours without taking a meal break of at least thirtyminutes duration.

4.2 An employer and worker may agree on longer meal breaks.

4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who ispaid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5 Special Conditions for Security Guards

5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

6 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

7 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

8 Work on Sundays and Public Holidays

8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

8.2 Work on Sundays is paid at the ordinary rate of pay.

8.3 A task-rated worker who works on a public holiday must be paid –

(a) The worker's daily task rate, if the worker works for less than four hours;
(b) Double the worker's daily task rate, if the worker works for more than four hours.

8.4 A time-rated worker who works on a public holiday must be paid –

(a) The worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) Double the worker's daily rate of pay, if the worker works for more than four hours onthe public holiday.

9 Sick Leave

9.1 Only workers who work four or more days per week have the right to claim sick-pay in terms ofthis clause.

9.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's

paid sick leave for every full month that the worker has worked in terms of a contract.

9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.7 An employer must pay a worker sick pay on the worker's usual payday.

9.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

(a) Absent from work for more than two consecutive days; or
(b) Absent from work on more than two occasions in any eight-week period.

9.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

10 Maternity Leave

10.1 A worker may take up to four consecutive months' unpaid maternity leave.

10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

10.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife, or qualified nurse certifies that she is fit to do so.

10.5 A worker may begin maternity leave –

(a) four weeks before the expected date of birth; or
(b) On an earlier date –

(i) If a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
(ii) if agreed to between employer and worker; or

(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

10.7 A worker who returns to work after maternity leave has the right to start a new cycle of twenty-four months employment, unless the SPWP on which she was employed has ended.

11 Family responsibility leave

11.1 Workers, who work for at least four days per week, are entitled to three days paid family

responsibility leave each year in the following circumstances -

(a) When the employee's child is born;
(b) When the employee's child is sick;

(c) In the event of a death of –
  (i) The employee's spouse or life partner;
  (ii) The employee's parent, adoptive parent, grandparent, child, adopted child, grandchild, or sibling.

12 Statement of Conditions

12.1 An employer must give a worker a statement containing the following details at the start ofemployment –

(a) The employer's name and address and the name of the SPWP;
(b) The tasks or job that the worker is to perform; and
(c) the period for which the worker is hired or, if this is not certain, the expected durationof the contract;
(d) The worker's rate of pay and how this is to be calculated;
(e) The training that the worker will receive during the SPWP.

12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

12.3 An employer must supply each worker with a copy of these conditions of employment.

13 Keeping Records

13.1 Every employer must keep a written record of at least the following –

(a) The worker's name and position;
(b) In the case of a task-rated worker, the number of tasks completed by the worker;
(c) In the case of a time-rated worker, the time worked by the worker;
(d) Payments made to each worker.

13.2 The employer must keep this record for a period of at least three years after the completion ofthe SPWP.

14 Payment

14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

14.2 A task-rated worker will only be paid for tasks that have been completed.

14.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

14.4 A time-rated worker will be paid at the end of each month.

14.5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

14.6 Payment in cash or by cheque must take place –
(a) At the workplace or at a place agreed to by the worker;
(b) during the worker's working hours or within fifteen minutes of the start or finish of work;
(c) In a sealed envelope which becomes the property of the worker.

14.7 An employer must give a worker the following information in writing –

(a) The period for which payment is made;
(b) The numbers of tasks completed or hours worked;
(c) The worker's earnings;
(d) Any money deducted from the payment;
(e) The actual amount paid to the worker.

14.8 If the worker is paid in cash or by cheque, this information must be recorded on the envelopeand the worker must acknowledge receipt of payment by signing for it.

14.9 If a worker's employment is terminated, the employer must pay all monies owing to that workerwithin one month of the termination of employment.

15 Deductions

15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

15.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order, or arbitration award concerned.

15.4 An employer may not require or allow a worker to –

(a) Repay any payment except an overpayment previously made by the employer by mistake;
(b) State that the worker received a greater amount of money than the employer actuallypaid to the worker; or
(c) Pay the employer or any other person for having been employed.

16 Health and Safety

16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

16.2 A worker must –

(a) Work in a way that does not endanger his/her health and safety or that of any other person;
(b) Obey any health and safety instruction;
(c) Obey all health and safety rules of the SPWP;
(d) Use any personal protective equipment or clothing issued by the employer;
(e) Report any accident, near-miss incident, or dangerous behaviour by another person to theiremployer or manager.

17 Compensation for Injuries and Diseases

17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

17.2 A worker must report any work-related injury or occupational disease to their employer or manager.

17.3 The employer must report the accident or disease to the Compensation Commissioner.

17.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

18 Termination

18.1 The employer may terminate the employment of a worker for good cause after following a fairprocedure.

18.2 A worker will not receive severance pay on termination.

18.3 A worker is not required to give notice to terminate employment. However, a worker whowishes to resign should advise the employer in advance to allow the employer to find a replacement.

18.4 A worker who is absent for more than three consecutive days without informing the employer ofan intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

18.5 A worker who does not attend required training events, without good reason, will have terminatedthe contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

19 Certificate of Service

19.1 On termination of employment, a worker is entitled to a certificate stating –

(a) The worker's full name;
(b) The name and address of the employer;
(c) The SPWP on which the worker worked;
(d) The work performed by the worker;
(e) Any training received by the worker as part of the SPWP;
(f) The period for which the worker worked on the SPWP;
(g) Any other information agreed on by the employer and worker

MONTHLY REPORTING

The successful bidder will be expected to assist with monthly reporting. These will include progress reports, labour reports, etc, submitted to the Project Manager on the dates to be stipulated.

FORM C1.4 HEALTH AND SAFETY AGREEMENT

HEALTH AND SAFETY SPECIFICATION

THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993
CONSTRUCTION REGULATIONS 2003

SECTION 1

1. INTRODUCTION

This document was construed in order to comply with the provisions of the **OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993, CONSTRUCTION REGULATIONS 2014 and COVID-19** Occupational Health and Safety Measures in Workplace 2020**.**

Definitions of words are those described in the Act and the Construction Regulations of 2003.

This document formulates the specification of the O. R. Tambo District Municipality in terms of the above act and forms part of the constitution of the organisation.

This document forms part of the employment contract of all employees and is as such accepted in writing by each employee. It also forms part of the agreement between the O. R. Tambo District Municipality and all service providers.

No clause in this document shall be amended in any contract document construed by agents, designers or anyone else except so ordered or sanctioned by the O. R. Tambo District Municipality in writing.

SCHEDULE

1.1 Definitions

1. In these Policy any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context otherwise indicates—

"**Agent**" means any person who acts as a representative for a client in the managing the overall construction work.

"**angle of repose**" means the steepest angle of a surface at which a mass of loose or fragmentedmaterial will remain stationary in a pile on a surface, rather than sliding or crumbling away;

*"***Batch plant***" means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work***;**

"**Client**" *means O. R. Tambo District Municipality***;**

"**competent person**" in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training;

"**Construction work**" means any work in connection with—

(a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;

(b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;

(c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or

(d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

"construction vehicle" *means a vehicle used for means of conveyance for transporting persons or material or both such persons and material, as the case may be, both on and off the construction site for the purposes of performing construction work;*
"Contractor" *mean an employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;*

"Design" *in relation to any structure includes drawings, calculations, design details and specifications;*

"Designer" *means any person who—*

(a) prepares a design;

(b) checks and approves a design;
(c) arranges for any person at work under his control (including an employee of his, where he is the employer) to prepare a design, as well as;

(d) Architects and engineers contributing to, or having overall responsibility for the design;

(e) Build services engineers designing details for fixed plant;

(f) Surveyors specifying articles or drawing up specifications;

(g) Contractors carrying out design work as part of a design and build project;

(h) Temporary works engineer designing formwork and false work; and

(i) Interior designers, shop-fitters and landscape architects.

"ergonomics" *means the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance;*

"Excavation work" means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

"**explosive powered tool**" means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;

"fall prevention equipment" means equipment used to prevent persons from falling from an elevated position, including personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment;

"fall arrest equipment" means equipment used to arrest the person in a fall from an elevated position, including personal equipment, body harness, lanyards, deceleration devices, lifelines or similar equipment, but excludes body belts;

"**fall protection plan**" means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk;

"Hazard identification" means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed;

"Health and safety file" means a file, or other record in permanent form, containing the information required as contemplated in these regulations;

"Health and safety plan" means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

"Health and safety specification" means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

"material hoist" means a hoist used to lower or raise material and equipment, and includes cantilevered platform hoists, mobile hoists, friction drive hoists, scaffold hoists, rack and pinion hoists and combination hoists;

"Medical certificate of fitness" means a certificate valid for one year issued by an occupational health practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa;

"**Method statement**" means a written document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

"Mobile plant" *means machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site;*

"National Building Regulations" means the National Building Regulations made under section 17(1) of the National Building Regulations and Building Standards Act, 1977 (Act No.103 of 1977), and published under Government Notice No. R.1081 of 10 June 1988, as amended;

"**Person day**" means one individual carrying out construction work on a construction site for one normal working shift;

"**principal contractor**" means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site**;**

"professional engineer or professional certificated engineer" means any person holding registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

"Professional technologist" means any person holding registration as a Professional Technologist under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

"Provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations under the Act;

"risk assessment" means a programme to determine any risk associated with any hazard at a construction site , in order to identify the steps needed to be taken to remove, reduce or control such hazard;

"Roof apex height" means the dimensional height in metres measured from the lowest ground level abutting any part of a building to the highest point of the roof;

"SABS 085" means the South African Bureau of Standards' Code of Practice entitled "The Design, Erection, Use and Inspection of Access Scaffolding";

"SABS 0400" means the South African Bureau of Standards, Code of Practice for the application of the National Building Regulations;

"SABS EN 1808" means the South African Bureau of Standards' Standard Specification entitled: "Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests";

"SABS 1903" means the South African Bureau of Standards' Standard Front-end Specification entitled: "Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests";

"Scaffold" means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

"shoring" means a structure such as a hydraulic, mechanical or timber/steel shoring system that supports the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation, and "shoring system" has a corresponding meaning;

"Structure" means—

(a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;

(b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or

(c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more;

"Suspended platform" means a working platform suspended from supports by means of one or more separate ropes from each support;

"The Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

"Tunnelling" means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral

HEALTH AND SAFETY SPECIFICATION

THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993
CONSTRUCTION REGULATIONS 2003

SECTION 2: DESIGNERS

1. All wording shall have the meaning as defined by the H&S Regulations 2003.

2. This specification is in terms of the H&S act 1993 and the regulations of 2003.

3. All work performed and procedures followed by designers shall be done according to the H&S regulations of 2003.

4. The client is aware of the fact that the appointment of a designer does not implicate that the designer becomes the agent of the client for the particular project. The appointment of an agent is done separately in writing and should be accepted by the designer as such.

5. The client is ultimately responsible for all safety issues regarding the project for which a designer is appointed and cannot contract out of his obligations in terms of the law.

6. The client shall not employ a designer should he have reasonable doubts that the designer is not able to execute work in a safe manner.

7. All designers shall have adequate insurance cover to indemnify the client for their acts and omissions in terms of professional conduct the H&S act in particular to indemnify the client against penalties imposed for acts or omissions. The client is aware of the fact that additional insurance over and above PI insurance is necessary to have himself indemnified by the designers for acts and omissions in terms of the H&S regulations. The professional indemnity insurance has a "negligent acts and omissions" wording only and therefore additional insurance is necessary to cover the client against penalties imposed in terms of the regulations.

8. Designers shall not accept work from the client if they are not capable of executing such work professionally and if such work cannot be executed in a safe manner, according to the provisions of the H&S regulations.

9. Designers shall execute all designs in terms of the relevant SABS and other acceptable codes and procedures and shall place great emphasis on safety issues including the maintenance procedures after inaugurations of such systems or projects.

10. Ergonomic parameters shall have high priority in all designs.

HEALTH AND SAFETY SPECIFICATION

THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993
CONSTRUCTION REGULATIONS 2003

SECTION 3: PRINCIPAL CONTRACTORS (P C)

1. All work by the P C shall be done in compliance with the provisions of the H&S regulations.
2. The Employer recognizes the right of each employee to work safely in a healthy environment under decent human conditions. Each employee has the right to return home safely and healthy to his home and family after each day's work.
3. Work shall not be done at the expense of human safety or health.
4. Work shall be executed under humane conditions, especially with reference to hours and H&S issues in mind.
5. The P C shall appoint a fulltime H&S Manager should he have more than 50 employees on site.
6. The PC shall conduct monthly safety meetings on site. All foremen, gang leaders and other employees shall participate and all incidents with relation to unsafe practices shall be discussed. Minutes of such meetings shall be kept in the H&S file.
7. Foremen and gang leaders shall, under the supervision of the H&S manager, conduct meetings with all staff and people under their direct supervision on a frequent basis. Minutes of such meetings shall be kept in the H&S file.
8. New personnel (temporary or full time employees) shall attend safety induction courses under the supervision of the H&S manager.
9. The P C shall install and maintain a box in which proposals for improvement of H&S procedures could be placed. All such proposals shall be considered, recorded and placed in the H&S file.
10. An adequate first aid facility shall be placed maintained on site and shall be adequately indicated by means of signs. All personnel shall be made aware of its existence and only trained first aid assistants shall be authorized to treat injuries.
11. The P C shall see that work is only executed by people trained for the particular task.
12. All safety equipment shall be SABS approved and under no circumstance shall any safety equipment be non-certified homemade equipment. Specifications and order details shall be kept in the H&S file.
13. Workers and personnel shall be attending safety courses on a regular basis and all information regarding such training shall be kept in the H&S file.
14. All employees shall be trained in safe working procedures and shall be trained on safety consciousness in particular. Employees in position of leadership shall be trained through accredited training processes in H&S matters.
15. The contractor shall prepare and maintain a safety plan for the particular project and shall train his personnel to work according to such plan.
16. Personnel and workers will be made aware of any natural hazards existing on site. They will also be made aware of items defined by the designer in his risk assessment.
17. No horseplay between employees will be tolerated on site. Neither will aggressive or threatening behaviour by anybody be allowed.
18. Workers shall wear appropriate protective clothing for the applicable task which shall include special safety equipment like protective eyewear, gloves, boots, ear protection, etc. Workers shall be issued with these items and copy of such issuing shall be kept in the H&S file.
19. Workers shall not be allowed to wear loose clothes and footwear.
20. Workers shall have the opportunity and right to prescribed rest, eating and toilet breaks.

21. Workers on nightshift shall be protected against inclement weather and shall have access to adequate food and drinks.

22. In cases where work is executed in remote or in security restricted areas, the P C will make provision for food to be supplied to his employees.

23. Potable water shall be made available free of charge to all workers on site.

24. Adequate toilet and washing facilities shall be made available to workers.

25. In the event of chemicals being present or used on site, the P C will allow for adequate shower facilities on site. All chemicals shall be stored according to specification and shall be clearly identified and marked in prescribed containers.

26. Workers under instruction to execute inherently unsafe procedures shall report such incidences to the H&S manager, designer of client immediately.

27. Unauthorized or unlawful instructions from foremen, gang leaders or colleagues shall be reported by the H&S manager immediately.

28. The P C shall stop his contractors if they work unsafely.

29. All specialist work shall be executed by registered artisans only.

30. Workers shall not be required to lift equipment or material heavier than 25kg or carry a load of more than 50 kg for more than 10 meters.

31. Workers shall not be exposed to conditions of heat where the temperature is above 40° Celsius and the humidity more than 75%. Likewise, will personnel not be exposed to temperatures lower than –5° Celsius? Should the designer and the P C decide that the work is urgent; workers will be issued with proper protective clothing.

32. All workers shall have access to a shaded eating and resting place on site.

33. Workers executing tasks in rivers, trenches and other natural or artificial water ways shall be made aware of the hazard of flash floods and special precautions shall be made by the P C to implement an effective flood warning system.

34. Workers executing tasks in manholes for sewer or storm water systems, shall be made aware of the existence of hazardous gasses in closed areas and shall be issued with gas masks in any event, even after tests conducted by the H&S manager has proven that no gasses are existent. Only specialists shall work in gas filled chambers.

35. Personnel executing work during rainy weather or under other wet conditions shall be equipped with proper gumboots and proper rain suits.

36. No personnel will be allowed to work in water unless gumboots are worn. Should the water be deeper than 300mm watertight suits shall be worn.

37. All ladders shall be fixed against scaffolding or other permanent structures.

38. Welding on site shall only be done by trained personnel behind adequate eye protecting shields and all welders shall wear proper protective gear.

39. Personnel operating grinders, saws or any other hand tools of similar description shall be equipped with the necessary eyewear and ear protection.

40. All personnel working under potentially dusty conditions shall wear nose and mouth filters.

41. Workers operating rock drilling equipment shall wear ear, nose and eye protection.

42. All scaffolding will comply with the H&S regulations.

43. Blasting will be done by specialists under the regulations of the Explosives Act.

44. Workers shall wear protective clothing when exposed to chemicals like cement, lime, detergents, tar, fumes, etc. Should work be executed in the presence of such material, adequate protective clothing and equipment shall be issued after permission is

granted by the H&S manager.

45. Workers will not be allowed to make open fires on any part of the site unless it is made in designated areas approved by the H&S manager.

46. Fuel storage will only be allowed on certified areas on site.

47. Workers and other personnel will be trained for fire procedures and will practice such fire drill on a regular basis.

48. Assembly areas for emergency evacuations will be indicated by adequate signage.

49. The P C will have an attendance register for the purposes of identifying people before, during and after potential hazardous situations.

50. All transport supplied by the P C shall be on road worthy vehicles only and all transport shall be conducted in terms of the transport act.

51. Drivers of vehicles shall be responsible for the roadworthiness of vehicles and will report any dysfunctional vehicles to the P C.

52. All drivers will be responsible to handle vehicles in such a way to comply with the transport act.

53. Passengers of vehicles shall report any unsafe conduct to the P C immediately. Such report shall be forwarded to the H&S manager and shall be investigated. Copy of such procedure shall be entered into the H&S file.

54. Only trained personnel shall be permitted and required to operate construction machinery. All such machinery shall be maintained in a safe working condition.

55. All vehicles operating on site shall have audible warning signals if driven backwards.

56. No vehicle shall be kept on site if it is leaking oil or other substances.

57. No vehicle or equipment shall be operated on site if it produces noise above 90 decibel measured within a distance of 10,0 m from the unit.

58. Equipment producing serious dusty conditions shall only be operated under the supervision of the P C and the H&S manager with the necessary protection to workers.

59. All excavations on site shall be adequately protected and not only indicated.

60. Exploratory excavation to reveal services shall be done in a specific way.

- All areas to be explored shall first be inspected by the landowner or local authority.
- Position of services identified shall then be verified by opening by hand, not by machine.
- Particular care shall be taken not to damage these services.
- Electrical services are inherently dangerous and shall be opened by skilled people only.
- These excavations shall not be left open without supervision. If necessary, the excavation shall be backfilled temporarily with approved material until the specified modifications to the services can be made.

61. Access to excavations shall only be by means of ladders or stairs with handrails.

62. All refuse, unsafe material, potential hazardous material and rubbish shall be placed in designated areas to be removed on a regular basis.

63. Rainwater shall be contained in trenches or pipes in such a way that it will not cause contamination of material in these refuse areas.

64. All electrical sources or cables or overhead power lines should be regarded as live at all times and all workers on site shall be made aware of its existence during H&S meetings and as many times as necessary.

65. Adequate signage shall be used on site to indicate

- Nonsmoking areas on site
- Safety exits / Emergency exits from buildings under construction
- Stairs (temporary and permanent works)
- Toilets
- Firefighting equipment
- Workmen busy with equipment overhead
- Fire assembly points
- Fire escapes
- Areas where members of the public are not allowed.
- First aid room

66. All visitors to the site shall be granted permission to the site only upon application through a predetermined procedure and records of these visitors shall be kept in the H&S file. Visitors shall attend safety induction training before entering the site. Areas out of bounds to all visitors shall be indicated clearly by means of adequate signs.

67. Work performed in public servitudes like the construction of streets or roads shall be done according to the specifications of the local or national authority and adequate signage shall be implemented.

68. People complaining about their health or people displaying symptoms of illness or disease, shall be allowed to go to the first aid facility or to visit a doctor or a clinic. Permission shall not be withheld unreasonably. In remote areas the P C is required to have reasonable ways of transporting people to a doctor or clinic whether the person is ill or injured on site.

69. Personnel must be informed about the location of the nearest doctor or clinic for casualty purposes and the P C shall provide such transport for injured workers and injured members of the public (within the limits of the site) free of charge.

70 A principal contractor who intends to carry out any construction work shall—

(a) before carrying out that work, notify the provincial director in writing of the construction work if it includes—

(i) The demolition of a structure exceeding a height of 3 metres; or

(ii) The use of explosives to perform construction work; or

(iii) The dismantling of fixed plant at a height greater than 3m.

(b) before carrying out that work, notify the provincial director in writing when the construction work—

(i) Exceeds 30 days or will involve more than 300 person days of construction work; and

(ii) Includes excavation work deeper than 1m; or

(iii) Includes working at a height greater than 3 metres above ground or a landing.

(2) The notification to the provincial director must be done on the form similar to Annexure A to this Policy.

(3) A principal contractor shall ensure that a copy of the completed form is kept on site for inspection by an inspector, client, client's agent or employee.

O. R. TAMBO DISTRICT MUNICIPALITY

HEALTH AND SAFETY SPECIFICATION
THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993
CONSTRUCTION REGULATIONS 2003

SECTION 4: CLIENT

(1) A client shall be responsible for the following in order to ensure compliance with the provisions of the Act:

(a) to prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same;

(b) To promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;

(c) To appoint each principal contractor in writing for the project or part thereof on a construction site;

(d) To take reasonable steps to ensure that each principal contractor's health and safety plan is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;

(e) to stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan for the site or which poses to be a threat to the health and safety of persons;

(f) to ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely;

(g) to ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and

(h) To ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.

(2) A client shall discuss and negotiate with the principal contractor the contents of the health and safety plan and thereafter finally approve the health and safety plan for implementation.

(3) A client shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.

(4) (4) O. R. Tambo District Municipality shall not appoint a principal contractor to perform construction work, unless O. R. Tambo District Municipality is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

(5) A client may appoint an agent in writing to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by these regulations upon a client, shall as far as reasonably practicable apply to the person so appointed.

(6) No client shall appoint any person as his agent, unless the client is reasonably satisfied that the person he or she intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by these regulations.

ANNEXURE A

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
Regulation 3 of the Construction Regulations, 2003

NOTIFICATION OF CONSTRUCTION WORK

1.(a) Name and postal address of principal contractor:

_____

(b) Name and tel. no of principal contractor's contact person:

_____

2. Principal contractor's compensation registration number:

_____

3.(a) Name and postal address of client:

_____

(b) Name and tel. no. of client's contact person or agent:

_____

4.(a) Name and postal address of designer(s) for the project:

_____

(b) Name and tel. no. of designer(s) contact person:

_____

5. Name and telephone number of principal contractor's construction supervisor on site appointed in termsof regulation 6.(1).

_____

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 6.(2).

_____

7. Exact physical address of the construction site or site office:

_____

8. Nature of the construction work:

_____

_____

_____

9. Expected commencement date:

_____

10. Expected completion date:

_____

11. Estimated maximum number of persons on the construction site.

12. Planned number of contractors on the construction site accountable to principal contractor:

_____

13. Name(s) of contractors already chosen.

_____

_____

_____

_____ _____
Principal Contractor Date

_____ _____
Client Date

- **THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR** PRIOR TO COMMENCEMENT **OF WORK ON SITE.**
- ALL PRINCIPAL CONTRACTORS **THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.**

GUIDELINES FOR CONTRACT ADMINISTRATION

O.R. TAMBO
DISTRICT MUNICIPALITY

O. R. TAMBO DISTRICT MUNICIPALITY

GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
HEALTH & SAFETY ACT 1993

SECTION 1 AND 2

1. PURPOSE OF THIS DOCUMENT

This document describes the procedures to be followed in the execution of Engineering Projects for O. R. Tambo District Municipality.

The role of all parties to the development project is described.

The document is in terms of the Construction Regulation 2003 of the Health and Safety Act 1993.

2. BACKGROUND

The Minister of Labour has on 18 July 2003 under section 43 of the Occupational Health and Safety Act 1993 (Act No. 85 of 1993) published new regulations in the Government Gazette 7721, Vol. 456. They have immediate effect and are applicable to the Construction Environment.

These regulations inter alia identify the different role players and their responsibilities, particularly the role of the client, thecontractor and that of the designer.

The Construction Regulations endeavour to ensure that:

i) Hazards or potential hazards to a healthy working environment are identified.

ii) These hazards or potential hazards are removed or minimised.

iii) Employers and Workers are made aware of the value of safe working procedures and train themselves to work safely in potential hazardous environments or under potentially unsafe conditions.

GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
HEALTH & SAFETY ACT 1993
SECTION 3

3. THE CLIENT

In terms of the law the client is ultimately responsible for all acts and omissions as far as health and safety is concerned on site. It should be noted that the client will be held legally responsible for every trespass of the regulations, not the designer or the contractor. The law makes provision for fines to be levied and unless the client has been indemnified by the designer or the contractor, such fines will have to be paid by the client.

Clients cannot contract out of their statutory obligations except where the law allows for it. Therefore, any liability imposed upon them for statutory non-compliance, cannot be passed on to designers (consultants) or contractors.

In particular, the client's responsibilities are defined as follows:

.1	To prepare a health and safety (H&S) specification for the work. This should cover the spectrum of activities handled by the client as part of his normal duties.	Clause 4(1)(a)
.2	To provide a risk assessment to the principal contractor.	Clause 4(1)(b)
.3	To appoint the principal contractor in writing.	Clause 4(1)(c)
.4	To ensure that the H&S plan is implemented.	Clause 4(1)(d)
.5	To stop any contractor executing work in an unsafe manner.	Clause 4(1)(e)
.6	To provide additional H&S information to the contractor should changes be made to the work?	Clause 4(1)(f)
.7	To ensure that the principal contractor is registered and in good standing with the workmen's compensation fund.	Clause 4(1)(h)
.8	To make sure tenderers have made provision in their offers for H&S measures.	Clause 4(1)(h)
.9	To discuss and approve the H&S plan with the principal contractor.	Clause 4(2)
.10	To keep a copy of the H&S plan of the principal contractor.	Clause 4(3)
.11	To <u>not</u> employ a contractor unless the client is reasonably satisfied that the principal contractor who is earmarked for an appointment has the necessary skills, competencies and resources to carry out the work safely.	Clause 4(4)
.12	The client can appoint an agent to handle his duties. The client can obviously also delegate some of his duties but this does not make the person responsible for such particular responsibilities as agent. The client should make sure whether such responsibilities are not already part of the designer in terms of the regulations clause 9(2).	Clause 4(5)
.13	The client shall only appoint someone as his agent if he is reasonably satisfied that such person can handle such responsibilities.	Clause 4(6)

GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
HEALTH & SAFETY ACT 1993

SECTION 4

4. THE DESIGNER

The regulations do not use names like engineer, architect, etc. Instead the term designer has been introduced. The responsibilities of the designer are given in a sub-paragraph under the obligations of the Principal Contractor.

4.1	The regulations has a comprehensive definition of the designer and this includes:	Definitions "designer"
a)	A person preparing a design.	Definitions "structure"
b)	A person checking a design.	
c)	A firm preparing a design.	
d)	An architect or engineer contributing to or having responsibility for a design.	
e)	A building services engineer designing details of fixed plant (scaffolding or cranes).	
f)	A surveyor specifying articles or drawing up specification (Quantity Surveyor).	
g)	A contractor in design & build contract.	
h)	A contractor designing temporary work.	
i)	A interior designer, shop fitter and landscape architect.	
	The regulation also talks of "an engineer designing a structure". "Structure" is a wide concept and is given in paragraph 3.2.5.1(a) underneath.	
4.2	The designer does not automatically through an appointment become the agent of the client in terms of the regulations unless he is appointed in writing to that effect and he accepts such appointment in writing.	Clause 4(5)
4.3	The SAACE model agreement between the client and Engineer has a different meaning of the word "agent". According to the model agreement of SAACE the Engineer acts as the "agent" of the client in a conventional contractual context. "Agent" in terms of the Health & Safety regulations has a totally different meaning.	
4.4	It can be derived from the regulations that the client can appoint a designer to perform certain tasks of the client on his behalf. This still does not mean that these designers become his agent in terms of clause 4(5).	Clause 4(5)
4.5	The regulations are fairly quiet regarding the functions and responsibilities of the designer except when designing of a structure. It is again assumed that the client will identify certain functions to be done by the designer on his behalf.	

4.5.1	"Structure" in terms of the regulations means:	Definitions
(a)	• any building • steel or reinforced concrete structure • railway line • railway siding • bridge • waterworks • reservoir • pipe or pipeline • cable • sewer • sewage works • fixed vessels • road • drainage works • earthworks • dam • wall • mast • tower • tower crane • batching plants • pylon • surface and underground tanks • earth retaining structure or any structure designed to preserve or alter any natural feature and any other similar structure.	
(b)	Any formwork, false work, scaffold or other structure designed or used to provide support or access during construction (structural engineering sector).	
(c)	Fixed plant to prevent people from falling 2 meters or more.	
4.5.2	The designer is in fact regarded as a person delivering designs only and unless his role is defined by the client, his role is quite limited.	Clause 9(2)
4.5.3	The designer should inform the client and the principal contractor about anticipated dangers relating to the construction work. <u>This is in fact a Risk Assessment.</u>	Clause 9(2)(b)
4.5.4	The designer (in the structural engineering context) shall further furnish to the contractor in writing:	Clause 9(2)
i)	A geo-technical report.	
ii)	The loading of the structure.	
iii)	The method and sequence of the construction process.	
iv)	He should exclude inherently dangerous methods of construction in his design.	
v)	The maintenance of the structure shall be through safe procedures.	
vi)	He should carry out inspections.	
vii)	And stop the contractor from executing work dangerously.	
viii)	A final inspection is necessary to ensure safety of the structure.	
ix)	Great emphasis should be given to the ergonomic design of the structure.	
x)	The engineer should also give input in the design of temporary work e.g. scaffolding.	Clause 10(c)

GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
HEALTH & SAFETY ACT 1993

SECTION 5

5. THE PRINCIPAL CONTRACTOR (P C) AND CONTRACTOR

The responsibilities of these parties are comprehensively stipulated in the regulations.

5.1	In general it can be seen that the responsibilities of the PC (Principal Contractor) towards his contractors is Mutatis Mutandis to the responsibilities of the Client towards the PC.	
5.2	The PC is responsible for the collecting of these contractors' safety plans and to hold them to it.	Clause 5(1) and (2)
i)	He should also stop his contractors should they work unsafely.	Clause 5(3)(d)
ii)	He should appoint safety officers should the size of the work warrant it.	Clause 6(6)
iii)	He should cause a risk assessment to be executed by a competent person.	Clause 7(1)
iv)	Visitors to his site should undergo induction pertaining to H&S issues.	Clause 7(8)
v)	He shall see to his employees induction and H&S training.	Clause 7(7)
vi)	The employees of the PC and his contractors shall wear visible proof of their induction training.	Clause 7(9)(a)
5.3	The regulations also covers the detail of:	
	• Fall protection	Clause 8
	• Structures (under this heading the responsibilities of the designer of a structure is found)	Clause 9
	• Formwork and support work	Clause 10
	• Excavation work	Clause 11
	• Demolition work	Clause 12
	• Tunnelling	Clause 13
	• Scaffolding	Clause 14
	• Suspended platforms	Clause 15
	• Boatswain's chairs	Clause 16
	• Material hoists	Clause 17
	• Batch plants	Clause 18
	• Explosive powered tools	Clause 19
	• Cranes	Clause 20
	• Construction vehicles and mobile plant	Clause 21
	• Electrical installation and machinery on construction sites	
	• Use and storage of flammable liquids on construction sites	
	• Water environment	Clause 22
	• Housekeeping on construction sites	
	• Stacking and storage on construction sites	Clause 23
	• Fire precautions on construction sites	Clause 24
	• Construction welfare facilities	Clause 25
		Clause 26
		Clause 27

GUIDELINES FOR CONTRACT ADMINISTRATION
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SECTION 6

6. APPOINTMENT OF THE DESIGNER

Clause 4(5)

6.1	The client appoints the consultant or designer as agent only for the particular project and also for the duration of the project.	
6.2	It is further important to distinguish between "agent" in terms of the SAACE model agreement between client and engineer and "agent" in terms of the H&S regulations.	
6.3	The responsibilities and duties of a designer in the H&S context are those that are dictated by law and/or those respectively given to him by the client, except when he is a structural engineer and designs a "structure" in which case clause 9(2) applies automatically.	
6.4	The client should only add to the responsibilities of the designer those which is not automatically in his hand in terms of clause 9(1) of the regulations.	
6.5	The following duties are not regarded as normal work of the designer of a "structure" and will therefore require an additional appointment.	
.1	To ensure the H&S plan of the PC is implemented on site.	Clause 4(1)(d)
.2	To ensure that changes to the design are also incorporated in the H&S plan.	Clause 4(1)(e)
.3	To ensure that the principal contractor is registered and in good standing with the workmens' compensation fund.	Clause 4(1)(f)
.4	To see that the contractor registers the site as a construction site at the Department of Labour.	Clause 4(1)(g)
.5	To discuss with the contractor the H&S plan and then recommend to the client the approval thereof.	Clause 4(2)
.6	To keep a copy of the H&S plan of the contractor in his possession and see that a copy is forwarded to the client.	Clause 4(4)
.7	Control the following on site:	
	a) To see that the principal contractor keeps the H&S file up to date and that it is given to the client upon completion of the contract.	Clause 5(7)
	b) To see that the principal contractor keeps a data base of all contractors involved with the project.	Clause 5(9)
	c) To see that the principal contractor appoints one or more construction supervisors.	
	d) To see that this person is dedicated to the particular project only.	Clause 6(4)
	e) To receive from the contractor his risk assessment and keep a copy of that for his and the clients records.	Clause 7(1)

GUIDELINES FOR CONTRACT ADMINISTRATION
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SECTION 7

7. THE ROLE OF THE CLIENT

7.1	The client shall still prepare the H&S specification in terms of clause 4(1)(a) for its global activities. The H&S specification for the particular project is assigned to the designer.	Clause 4(1)(a)
7.2	The client shall approve of the H&S plan of the contractor, but on the recommendation of the consultant/ designer.	Clause 4(2)
7.3	The client employs the Principal Contractor.	Clause 4(1)(c)
7.4	The client can appoint an agent in which case all the responsibilities of the agent in the regulations are transferred to the agent.	Clause 4(5)
7.5	The client should only appoint an agent should he have made reasonably sure that the agent can handle the responsibility.	Clause 4(6)
7.6	The client shall not appoint a contractor if he is not reasonably sure that the contractor can execute such work in a safe manner.	Clause 4(4)

GUIDELINES FOR CONTRACT ADMINISTRATION
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SECTION 8

8. THE ROLE OF THE PRINCIPAL CONTRACTOR

The principal contractor should execute the following duties:

.1	Provide a health and safety plan.	5(1)
.2	See that his contractors comply with the regulations.	5(2)
.3	He should discuss the particular H&S plan.	5(5)
.4	He should have his H&S plan available.	5(6)
.5	He should have an H&S file available on site and hand it over to the client upon completion.	5(7)
.6	He should not employ contractors who are not capable.	5(10)
.7	He should have full time supervision on site.	6(1) to 6(8)
.8	He should produce a risk assessment of the work.	7(1)
.9	He should train his employees.	7(4)
.10	He should introduce induction training on site.	7(7)/ 7(8)
.11	All physical aspects of the regulations as in terms of the regulations.	

GUIDELINES FOR CONTRACT ADMINISTRATION
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SECTION 9

9. THE PROCEDURE

9.1	The Client decides to execute work and appoints a designer to administer the work.	
9.2	The scope of works and the exact duties of the designer are identified and given to him in writing. The designer should affect insurance by which the client is indemnified (by the designer) for acts and omissions of the designer. This type of insurance does not form part of the normal PI insurance provided by the designer. The designer prepares a contract document and ensures that this document states clearly the following:	
.1	A risk assessment of the project and the H&S specification of the client.	
.2	All relevant information to enable the pricing of the contract.	9(2)(a)
.3	Items in the bill to enable the tenderer to price for the risk including insurance indemnifying the client. The document should state whether a full time safety officer is required on site.	9(2)(b)
.4	(i) Geotechnical information (ii) Loading of the structure – in other words all relevant technical data taking the definition of "structure" into account. (iii) The method and sequence of the process. This should identify the priorities of the client.	9(2)(c)(i) to (iii)
.5	Inherently dangerous procedures should be avoided in the design.	9(2)(d)
.6	The maintenance of the structure should be considered also so that this aspect would be safe and ergonomic too.	9(2)(e)
9.3	The tenderers then respond by each giving a H&S plan based on the risk assessment of the designer.	
9.4	The client then chooses the contractor according to his procurement policy (taking into account his ability to do the work safely) and appoints him in writing via the designer.	
9.5	The chosen principal contractor then affects a detailed risk assessment and a risk management plan, based on the H&S specification.	

9.7	Once on site the principal contractor should register the site by means of the prescribed form and have it approved by the client/designer.	
9.8	He should open and then maintain his H&S file through the duration of the contract.	
9.9	He should then further adhere to the provisions of the H&S regulations.	
9.10	He should hand over the H&S file (recommend to do that with the designer's as-built drawings).	
9.11	The designer should stop the work if he has reason to belief that the contractor is executing work in an unsafe manner.	
9.12	Likewise should the principal contractor stop the work of his contractor(s) should he have reason to belief that such contractor is not working safely.	

O. R. TAMBO DISTRICT MUNICIPALITY

GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
HEALTH & SAFETY ACT 1993

SECTION 10

10. CONTRACT DOCUMENTATION

The contract documentation needs to emphasize the following points in order to comply with the Health and Safety Act 1993 and the Construction Regulations 2003.

A. In the Specification section

1. Health and Safety Specification

The Client shall issue the Designer with his Health and Safety specification and it shall be included as such in the document.

Should the Designer be of the opinion that variations and additions be made to the specification, due to the nature of the particular project, he shall forward the proposed variation or addition to the NDM who will authorize this in writing.

2. Risk Assessment

This can form part of the contract specifications.

It is necessary to identify to the contractor:

i) The situation on site as it is with all the potential hazards and dangers involved.

ii) The nature of the work and the situations that the average contractor would encounter during the execution of the work. The nature of the work and the expected risks should be described in particular as well as the method and the sequence of the work.

iii) The basic safety precautions that he should take.

iv) The Safety and Health specification of the client.

v) To allow sufficient items in the bill of quantities for the tenderer to price for the specified H&S precautions.

3. Insurance

The contractor shall affect insurance indemnifying the client against penalties levied upon the client due to the acts or omissions of the contractor in failing to comply with the provisions of the H&S regulations 2003.

The contractor shall prove to the Engineer that such insurance has been affected and maintained during the construction.

B. The Tender Rules

The tender rules shall contain a clause requiring the contractor to submit a H&S plan based on the risk assessment given in the contract document. It should also state that the client is bound by law not to appoint a contractor should he be reasonably sure that the contractor would not be able to execute the work safely should he be appointed.

The following example is recommended.

Compliance with the Regulations of the H&S Act 2003

Tenderers are required to study the published risk assessment and provide Annexure Y his Health and Safety Plan. Generic document will be disregarded. Such H&S plan should give details regarding the tenderers intention of dealing with the risks. Failure to submit such H&S plan will result in disqualification of the tender. Tenderers are informed that the client is bound by law not to accept a tender should he be reasonable sure that the tenderer will not be able to execute the work safely.

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GUIDELINES FOR CONTRACT ADMINISTRATION
IN TERMS OF THE CONSTRUCTION REGULATIONS 2003
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SECTION 11

11. CONCLUSION

The Construction Regulations 2003 was long overdue in the South African Civil Engineering Construction Industry. Role players will now be forced to implement them and an awareness of safe working environments will be cultivated.

Clients might initially detect a contemptuous attitude particularly from contractors and even designers or consultants. This should not deter clients since acts and omissions from these parties will bring clients in confrontation with the law.

Contract cost will certainly escalate due to the additional specifications but this should be weighed against the value of human lives improved and saved.

The construction industry, particularly the Civil Engineering Sector, will have to accept and embrace these regulations and then seriously look at its productivity to kerb the cost of the implementation process.

1.0 SCOPE

This part of the specification has the objective to assist principal contractors entering into contracts with The Employer that they comply with the Occupational Health and Safety (OH&S) Act, No 85 of 1993.Compliance with this document does not absolve the principal contractor from complying with minimum legal requirements, and the principal contractor remains responsible for the health and safety of his employees and those of his Mandataries. Principal and other contractors should therefore insist that this part of the specification from part of any contract that he may have with other contractors and/or suppliers.

This section covers the development of a health and safety specification that addresses all aspects of occupational health and safety as affected by this contract. It provides the requirements that the principal contractors and other contractors shall comply with in order to reduce the risks associated with this contract that may lead to incidents causing injury and/or ill health.

2.0 GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS

2.1 Hazard Identification and Risk Assessment (Construction Regulation 7)

2.1.1 Risk Assessments

Paragraph 4 contains a generic list of risk assessment headings that have been identified by The Employer as possibly applicable to this contract. It is, by no means, exhaustive and is offered as assistance to contractors intending to bid.

2.1.2 Development of Risk Assessment

Every principal contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, cause a risk assessment to be performed by a competent person, appointed in writing, and the risk assessment shall form part of the OH&S plan and be implemented and maintained as contemplated in Construction Regulation 5(1).

The risk assessment shall include at least:

- *the identification of the risks and hazards to which persons may be exposed*
- *the analysis and evaluation of the risks and hazards identifies*
- *a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified.*
- *a monitoring plan and*
- *a review plan*

Based on the risk assessment, the principal contractor shall develop set site-specific OH&S rules that shall be applied to regulate the OH&S aspects of the construction. The risk assessment, together with the site-specific OH&S rules shall be submitted to The Employer before construction on site commences.

Despite the risk assessment listed in paragraph4, the principal contractor shall conduct a baseline risk assessment and the aforesaid listed risk assessment shall be incorporated into the baseline risk assessment. The baseline assessment shall further include the standard working procedures and the applicable method statements based on the risk assessments.

All variations to the scope of work shall similarly be subjected to a risk assessment process.

2.1.3 Review of Risk Assessment

The principal contractor shall review the hazard identification, risk assessments and standard working procedures at each production planning and progress report meetings as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and processes. The principal contractor shall provide The Employer, other contractors and all other concerned parties with copies of any changes, alterations oramendments as contemplated in paragraph 2.1.3.

2.2 Legal Requirements

A principal contractor shall, as minimum, comply with:

The Occupational Health and Safety Act and Regulations (Act 85 of 1993), an up to date copy of which shall be available on site at all times.

The Compensation or Occupational Injuries and Diseases Act (Act 130 of 1993), an up to date copy of which shall be available on site at all times.

Where work is being carried out on a "mine", the contractor shall comply with the Mines Health and Safety Act and Regulations (Act 29 of 1960) and any other OH&S requirements that the mine may specify. An up-to-date copy ofthe Mine's Health and Safety Act and Regulations shall be available on site at all times.

2.3 Structure and Responsibilities

It is a requirement that the principal contractor, when he appoints contractors (Sub-contractors) in terms of Construction Regulations 5(3), 5(5), 5(10), and 5(12) includes in his agreement with such contractors the following:

- *OH& S Act (85 of 1993), Section 37(2) agreement: "Agreement with Mandatory"*
- *OH&S Act (85 of 1993), Section 16(2) appointee/s as detailed in his / her/ their respective appointment forms.*

2.2.3 Further (Specific) Supervision Responsibilities for OH & S

The contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations. Below is a generic list of identified appointments and may be used to select the appropriate appointments for this contract. The contractor shall note it is a generic list only and is intended for use as a guideline.

Ref. Section/ Regulation in OHS Act	
Batch Plant Supervisor	*(Construction Regulation 6(1)*
Construction Vehicles/ Mobile Plant/ Machinery Supervisor	*(Construction Regulation 21)*
Demolition Supervisor	*(Construction Regulation 12)*
Drivers/Operators of Construction Vehicles/ Plant	*(Construction Regulation 21)*
Electrical Installation and Appliances Inspector	*(Construction Regulation 22)*
Emergency/Security/Fire Control	*(Construction Regulation 27)*
Excavation Supervisor	*(Construction Regulation 11)*
Explosive powered Tool Supervisor	*(Construction Regulation 19)*
Fall Protection Supervisor	*(Construction Regulation 8)*
First Aider	*(Construction Regulation 3)*
Fire Equipment Inspector	*(Construction Regulation 27)*
Formwork & Support work Supervisor	*(Construction Regulation 10)*
Hazardous Chemical Substances Supervisor	*(HCS Regulations)*
Incident Investigator	*(General Admin Regulation 29)*
Ladder Inspector	*(General Safety Regulation 13A)*
Lifting Equipment Inspector	*(Construction Regulation 20)*
Material Hoist Inspector	*(Construction Regulation 17)*
OH&S Committee	*(OH&S Section 19)*
OH&S Officer	*(Construction Regulation 6(6)*
OH&S Representatives	*(OHS Act Section 17)*
Person Responsible for Machinery	*(General Machinery Regulation 2)*
Scaffolding Supervisor	*(Construction Regulation 14)*
Stacking & Storage Supervisor	*(Construction Regulation 26)*
Structures Supervisor	*(Construction Regulation 9)*
Suspended Platform Supervisor	*(Construction Regulation 15)*
Tunneling under Pressure Supervisor	*(Construction Regulation 13)*
Vessel under Pressure Supervisor	*(Vessel under Pressure Regulations)*
Working on/next to Water Supervisor	*(Construction Regulation 24)*
Welding Supervisor	*(General Safety Regulation 9)*

In addition, The Employer requires that a Traffic Safety Officer be appointed (see COLTO Section 1500). The above appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated and agreed with the appointees. Notice of appointments shall be submitted to The Employer. All changes shall also be communicated to the Employer.

The principal contractor or shall, furthermore, provide The Employer with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated and prominently displayed on site.
Where necessary, or when instructed by an inspector of the Department of Labour, the principal contractor shall appoint a component safety officer.

2.3.3 Designation of OH&S Representatives (Section 17 of the OH&S Act)

Where the principal contractor employs more than 20 persons (including the employees of other contractors (sub-contractors) he has to appoint one OH&S representatives for every 5 employees or part thereof. General Administrative Regulation 6 requires that the appointment or election and subsequent designation of the OH&S representatives be conducted in consultation with employee representatives or employees. (Section 17 of the Act and General Administrative Regulation 6 & 7). OH&S representatives shall be designated in writing and the designation shall include the area of responsibility of the person and term of the designation.

2.3.4 Duties and Functions of the OH&S representatives (Section 18 of the OH&S Act)

The principal contractor shall ensure that the designated OH&S representatives conduct continuous monitoring and regular inspections of their respective areas of responsibility using a checklist and report thereon to the principal contractor. OH&S representatives shall be included in accident or incident investigations. OH&S representatives shall attend all OH&S committee meetings.

2.3.5 Appointment: of OH&S Committee (Section 19 and 20 of the OH&S Act)

The principal contractor shall establish an OH&S committee, which shall meet as specified in the Regulations.

2.4 *Administrative Controls and the Occupational Health & Safety File*

2.4.1 *The OH&S File (Construction Regulation 5(7)*

As required by the Construction Regulation 5(7), the principal contractor and other contractors shall each keep an OH&S file on site. The following list is not exhaustive and shall only be used as a guide:

- *Notification of construction work (Construction Regulation 3)*
- *Latest copy of OH&S Act (General Administrative Regulation 4)*
- *Proof of registration and good standing with COID Insurer (Construction Regulation 4(g)*
- *OH&S plan agreed with the client including the underpinning risk assessment/s and method statements(Construction Regulation 5(1)*
- *Copies of OH&S committee and other relevant minutes*
- *Designs/Drawings (Construction Regulation 5(8)*
- *A list of contractors (sub-contractors) including copies of the agreements between the parties and the type of work being done by each contractor (Construction Regulation 9)*
- *Appointment/designation forms as per paragraphs 2.1.1 and 2.1.2*
- *Registered as follows:*
  - *Accident/incident register (Annexure 1 of the General Administrative Regulations)*
  - *OH&S representatives' inspection register*
  - *Asbestos demolition and stripping register*
  - *Batch plant inspections*
  - *Construction vehicles and mobile plant inspections by controller*
  - *Daily inspection of vehicles, plant and other equipment by the operator/driver/user*
  - *Demolition inspection register*
  - *Designer's inspection of structures record*
  - *Electrical installations, equipment and appliances including portable electrical tools)*
  - *Excavations inspector*
  - *Explosive powered tool inspection, maintenance, issue and returns register (incl. Cartridges and nails*
  - *Fall protection inspection register*
  - *First aid box contents*
  - *Fine equipment inspection and maintenance*
  - *Formwork and support work inspections*
  - *Hazardous chemical substances record*
  - *Ladder inspections*
  - *Lifting equipment register*
  - *Materials hoist inspection register*
  - *Machinery safety inspection register (incl. Machine guards, lock-outs etc.)*
  - *Scaffolding inspections*
  - *Stacking and storage inspection*
  - *Inspection of structures*
  - *Inspection of suspended platforms*
  - *Inspection of tunnelling operations*
  - *Inspection of vessels under pressure*
  - *Welding equipment inspections*
  - *Inspection of work conducted near water*
  - *All other applicable records including traffic safety officer reports.*

The Employer will conduct an audit on the OH&S file of the principal constructor from time-to time.

2.5 Notification of Construction Work (Construction Regulation 3)

The principal constructor shall, where the contract meets the requirements laid down in Construction work and use the form (Annexure A in the Construction Regulations) for the purpose. A copy shall be kept on the OH&S file and a copy shall be forwarded to The Employer for record keeping purposes.

2.6 Training and Competence

The contents of all training required by the Act and Regulations shall be included in the principal contractor's OH&S plan. The principal contractor shall be responsible for ensuring that all relevant training is undertaken.

Only accredited service providers shall be used for OH&S training. The principal contractor shall ensure that his and other contractor's personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences. The principal contractor shall ensure that follow-up and refresher training is conducted as the contract progresses and the work situation changes. Records of all training must be kept on the OH&D file for auditing purposes.

2.7 Consultations, Communication and Liaison

OH&S liaison between the client, the principal contractor, the other contractors, the designer and other concerned parties will be through the OH&S committee as contemplated in paragraph 2.3.5.In addition to the above, communication may be directly to the client or his appointed agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their supervisions, OH&S representatives and the OH&S committee. The principal contractor shall be responsible for the dissemination of all relevant OH&S information to the other contractors e.g. design changes agreed with the client and the designer, instructions by the client and/or/his/her agent, exchange of information between contractors, the reporting of hazardous/dangerous conditions/situations etc. The principal contractor's most senior manager on site shall be required to attend all OH&S meetings.

2.8 Checking Reporting and Corrective Actions

2.8.1 Monthly Audit by Client (Construction Regulation 4(1) (d)

The Employer will conduct monthly audits to comply with Construction Regulation 4(1)(d) to ensure that the principal contractor has implemented and is maintaining the agreed and approved OH&S plan.

2.8.2 Other Audits and Inspections by The Employer

The Employer reserves the right to conduct other hoc audits and inspections as deemed necessary. This will include site safety walks.

2.8.3 Contractor's Audits and Inspections

The principal contractor is to conduct his own monthly internal audits to verify compliances with his own OH&S management system as well as this specification.

2.8.4 Inspections by OH&S Representatives and other Appointees

OH&S representatives shall conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees shall conduct inspections and report thereon as specified in their appointments e.g. vehicle and machinery drivers, operators and users must conduct daily inspections before start-up.

2.8.5 Recording and Review of Inspection Results

All the results of the above mentioned inspections shall be in writing at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

2.9 Accidents and Incident Investigation (General Administrative Regulation 9)

The principal contractor shall be responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic. The results of the investigations shall be entered into an accident/incident register listed in paragraph2.4.1

The principal contractor shall be responsible for the investigation of all minor and non-injury incidents as described in Section24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

2.10 Reporting

The principal contractor shall provide the Employer with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

3.0 OPERATIONAL CONTROL

3.1 Operational Procedures

Each construction activity shall be assessed by the principal contractor so as to identify operational procedures that will mitigate against the occurrence of an incident during the execution of each activity. This specification requires the principal contractor:

- *to be conversant with Regulations 8 to 29 (inclusive)*
- *to comply with their provisions*
- *to include them in his OH&S plan where relevant*

3.2 Emergency Procedure

Simultaneous with the identification of operational procedures (per paragraph 3.1 above), the principal contractor shall similarly identify and formulate emergency procedures in the event an incident does occur. The emergency procedures thus identified shall also be included in the principal contractor's OH&S plan.

3.3 Personal & Other Protective Equipment (Section 8/ 15/ 23 of the OH&S Act)

The contractor shall identify the hazards in the workplace and deal with them. He must either remove them or, where impracticable, take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of PPE is considered.

Where it is not possible to create an absolutely safe and healthy workplace the contractor shall inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the contractor maintain the said equipment, that he instructs and trains the employeesin the use of the equipment and ensures that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use/wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating or discharging the employee.

The principal contractor shall include in his OH&S plan the PPE he intends issuing to his employees for use during construction and the sanctions he intends to apply in cases of non-conformance by his employees. Conformance to the wearing of PPE shall be discussed at the weekly inspection meetings.

3.4 Other Regulations

Wherever in the Construction Regulations or this specification there is reference to other regulations (e.g. Construction Regulation 22: Electrical and Machinery on Construction Sites) the principal contractor shall be conversant with and shall comply with these regulations.

3.5 Public Health and Safety (Section 9 of the OH&S Act)

The principal contractor shall be responsible for ensuring that non-employees affected by the construction work are aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimize those dangers. This includes:

- *Non-employees entering the site for whatever reason*
- *The surrounding community*
- *Passers by to the site*

4.0 PROJECT/S SPECIC REQUIREMENTS

4.1 List of Risk Assessments

- *Clearing and Grubbing of the areas/site*
- *Site establishment including:*
  - Offices
  - Secure/safe storage foe materials and equipment
  - Ablutions
  - Sheltered eating area
  - Maintenance workshop
  - Vehicle access to the site
- *Dealing with existing structures*
- *Location of existing services*
- *Installation and maintenance of temporary construction electrical supply, lightning and equipment*
- *Adjacent land uses/surrounding property exposures*
- *Boundary and access control/public liability exposures (NB: the employer is also responsible for the OH&S of the non-employees affected by his/her work activities)*
- *Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes and lightning etc.*
- *Exposure to noise*
- *Exposure to vibration*
- *Protection against dehydration and heat exhaustion*
- *Protection from wet and cold conditions*
- *Dealing with HIV/AIDS and other diseases*
- *Use of portable electrical equipment including*
  - Angle grinder
  - Electrical drilling machine
  - Still saw
- *Excavation including*
  - Ground/soil conditions
  - Trenching
  - Shoring
  - Drainage of trench
- *Welding including*
  - Arc welding
  - Gas welding
  - Flame cutting
  - Flame cutting
  - Use of LP gas torches and appliances

- *Loading and offloading of truck*
- *Aggregate/sand and other materials delivery*
- *Manual and mechanical handling*
- *Lifting and powering operators*
- *Driving and operation of construction vehicles and mobile plant including.*
  - Trenching machine
- Use and storage of flammable liquids and other hazardous substances
- Layering and bedding
- Installation of pipes in pipelines
- Backfilling trenches
- Protection against flooding
- Gabion work
- Use of explosive
- Protection form overhead power lines
- As discovered by the principal contractor's hazard identification exercise
- As discovered from any inspection and audits conducted by the client of by the principal contractor or any other contractor on site
- As discovered from any accident/incident investigation

FORM C1.5 SUPPLY CHAIN MANAGEMENT POLICY

Please refer to O. R. Tambo District Municipality's Procurement Policy.

C2 PRICING DATA

C2.1C2.2 Pricing Instructions

Bill of Quantities

FORM C2.1 PRICING INSTRUCTIONS

1. Measurement and payment for Bill A (Preliminary & General) & Bill B (Civil Works) shall be in accordance with the relevant provisions of Clause 8 of each of the SANS 1200 Specifications for Civil Engineering Construction referred to in the Scope of Work.

2. Measurement and payment for Bill C (Building Works) & Bill D (Electrical Installation Works) shall be in accordance with the relevant Particular Specifications for building works and electrical installation work respectively.

3. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	=	percent	m^2.pass	=	square metre-pass
h	=	hour	m^3	=	cubic metre
ha	=	hectare	m^3.km	=	cubic metre-kilometre
kg	=	kilogram	MN	=	meganewton
kl	=	kilolitre	MN.m	=	meganewton-metre
km	=	kilometre	MPa	=	megapascal
km-pass	=	kilometre-pass	No.	=	number
kPa	=	kilopascal	Prov sum	=	Provisional sum
kW	=	kilowatt	P C sum	=	Prime Cost sum
l	=	litre	sum	=	lump sum
m	=	metre	t	=	ton (1 000 kg)
mm	=	millimetre	W/day	=	Work day
m^2	=	square metre			

4. Unless otherwise stated, items are measured net in accordance with the drawings with no allowance for waste.

5. The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the items. Such prices and rates shall cover all costs and expenses that may be required in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices shall be used as a basis for assessment of payment for additional work that may have to be carried out.

6. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to **www.sabs.co.za** or **www.iso.org** for information on standards).

7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered for such items.

8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.

9. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.

10. Reasonable compensation will be received where no pay item appears in respect of work required in the Bills of Quantities in terms of the Contract and which is not covered in any other pay item.

11. The short descriptions of the items of payment given in the Bill of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.

12. Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the SANS 1200 Standardised Specifications.

13. If there is a discrepancy in description of items between the Bill of Quantities and the Drawings, the Bill of Quantities Description shall be used.

FORM C2.2 BILL OF QUANTITIES

C2.2 Bill of Quantities

SUMMARY OF BILL OF QUANTITIES

SECTION	DESCRIPTION	AMOUNT (R)
1	SCHEDULE A - PRELIMINARY AND GENERAL	_____
2	SCHEDULE B - SITE CLEARANCE	_____
3	SCHEDULE C: STRUCTURES - BULK EXCAVATIONS	_____
4	SCHEDULE D: STRUCTURES - INLETWORKS	_____
5	SCHEDULE E: STRUCTURES - PRIMARY SETTLERS	_____
6	SCHEDULE F: STRUCTURES - DENITRIFICATION TANK	_____
7	SCHEDULE G: STRUCTURES - BIO-FILTERS	_____
8	SCHEDULE H - CLARIFIERS	_____
9	SCHEDULE I - SLUDGE DRYING BEDS	_____
10	SCHEDULE J - NEW CHLORINE CONTACT TANK	_____
11	SCHEDULE K - PUMP SUMPS	_____
12	SCHEDULE L - MEDIUM PRESSURE PIPELINES	_____
13	SCHEDULE M: PUMPS MECHANICAL AND ELECTRICAL EQUIPMENT	_____
14	SCHEDULE N - OPERATION AND MAINTANANCE	_____
15	SCHEDULE O : NEW BUILDINGS	_____
16	SCHEDULE P - ROADS AND STORMWATER	_____
17	SCHEDULE Q - FENCING	_____
18	SCHEDULE R - SEWER PIPELINES TO NEW ELEMENTS	_____
19	SCHEDULE S - WATER RETICULATION	_____
	NETT TOTAL OF TENDER	_____
	ALLOWANCE FOR CONTINGENCIES (10% of Nett Total above) (to be spent as the Engineer may direct and to be deducted in whole or in part it not required)	_____
	TOTAL INCLUDING CONTINGENCIES	_____
	ALLOWANCE FOR VAT 15%	_____
	GROSS TOTAL CARRIED TO FORM OF OFFER	_____

TIME FOR COMPLETION OF CONTRACT ***(not to exceed 46 Weeks)*** **…… weeks**

SIGNED BY/ON BEHALF OF TENDERER

NAME	**SIGNATURE**	**DATE**

COMPANY STAMP

Declaration

(In respect of completeness of Tender)

O. R. TAMBO DISTRICT MUNICIPALITY
NELSON MANDELA DRIVE
MYEZO PARK
MTHATHA

I/we, the undersigned, do hereby declare that these are the properly priced Bill of Quantities forming Part C2 of this Contract Document in consecutive order upon which my/our tender for the **PROJECT NUMBER: MIS 403 690 A – QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT** has been based.

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O. R. TAMBO DISTRICT MUNICIPALITY

CONTRACT NO.: MIS 403 690 A

QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT PHASE 1

C3 SCOPE OF WORK

All definitions, interpretations and general provisions for the General Conditions of Contract for Construction Work (2015) (3rd edition) are applicable.

C 3.1 DESCRIPTIONS OF WORKS

C3.1.1 Client's Objective

The Client objectives are as follows:

- To provide a WASTEWATER TREATMENT Plant for Qumbu Town and future developments to alleviate contamination of the environment and to achieve Green Drop compliance.
- To provide job opportunities for the development of skills within local communities for both individuals and entrepreneurs.

It is a specific goal of this project that the labour component, where possible, be maximised where it is economically feasible, and that the use of this labour goes hand in hand with on the job training of the labour force. The project is thus process and product orientated, and it is expected that the contractor will pursue these goals in the execution of the project.

C3.1.2 Overview of the Works

This is the first phase of the project dealing specifically with the construction of the Qumbu Town Wastewater Treatment Works (WWTW). The majority of the works included in this Phase 1 of the project will be almost located in a preselected Greenfield site located approximately 1km northwest of Qumbu town. With the balance of the works being constructed in and between the existing WWTW approximately 300m from the proposed new works:

- General site works as in clear and grub, removal of topsoil to stockpile
- Excavating, bedding, laying, backfilling and testing of sewage and medium pressure pipework varying in diameter from 25mm to 315mm Ø pipes,
- Construction of manholes, chambers and valve boxes.
- Concrete water retaining structures as in circular primary and secondary settlers, pump sumps, drying beds, chlorine dosing and retention chambers.

- The construction of a circular bio-reactors with RC base and loffelstein retaining walls (Labour intensive)
- Installation of mechanical and electrical equipment,
- Testing and commissioning of the works,
- Construction of access, internal roads and stormwater
- Construction of new office, storage buildings, operator accommodation and other required structures.
- Construction of a concrete palisade boundary fence with entrance gates
- Supply of bulk electrical and mini substation
- Internal electrification and lighting

C3.1.3 Extent of the Works

The work to be carried out by the Contractor under this Contract comprises mainly of the following sections:

- Establishment of Contractor on Site.
- Clear grub and topsoil strip to stockpile for latter reuse.
- Supply, excavation, bed, lay, test and backfilling of 200m of domestic 110mm PVC pipelines.
- Supply, excavation, bed, lay, test and backfilling of 900m of uPVC medium pressure pipelines ranging from 90mm to 200 Ø pipes.
- Supply, excavation, bed, lay, test and backfilling of 750m of uPVC sewer pipelines ranging from 110mm to 315 Ø pipes.
- Construction of an inlet works, 2 trains of sewage treatment units each consisting of a Primary settler, denitrification MBBR tank, biological filter, clarifier, chlorine dosing and retention unit and 10 drying beds per train (as per tender drawings);
- Construction of pumpstations for effluent recycle, supernatant and emergency over flow from existing pond back to the top of the works.
- The construction of required buildings: office block, operator housing, MCC/storeroom, guard house, inlet works operator building and Chlorine storage and dosing building, as per tender drawings.
- Gravel access and internal roads
- Stormwater drainage including a low-level weir at the existing stormwater channel crossing the access road
- Electrical supply, installation to the existing elements of the project including site lighting
- Mechanical electrical manufacture, fitting, installation and commissioning of pumps and fitting
- Basic skills training.
- Contractor's de-establishment.
- Maintenance of the above for a period of 12 months after the Certificate of Completion.

The sequence of the main items of work to be carried out as follows:

- Site establishment

Access roads and fencing

- Clear and grub
- Setting out
- Construction of low-level causeway
- Removal of topsoil

- Cut to fill
- Rip recompact in-situ material
- Import process and compact gravel wearing course to access road

WWTW

- Clear and grub
- Setting out
- Removal of topsoil
- Excavation for structures
- Construction of sewage structures and buildings
- Bedding and pipe laying and backfill of ducts, medium pressure and sewage pipe work
- Construction of manholes
- Rip recompact insitu material
- Import process and compact gravel wearing course to internal road
- Electrification of site and buildings
- Mechanical Electrical to WWTW (Nominated Sub consultant)
- Disposal of spoil material
- Testing and commissioning
- Maintenance of all Environmental requirements;
- Cleaning of site on completion.
- Correction of defects in the Works in accordance with the requirements specified in the Contract Documents.

C3.1.4 Project Location

The proposed project is located in the Eastern Cape within the boundaries of Mhlontlo Local Municipality. The site is situated within Qumbu town.

C3.1.5 Temporary Works

Other than the usual temporary works that are the responsibility of the Contractor, the following temporary works are required:

a) Shoring
Temporary crossing of stormwater channel

C3.1.6 Construction program

It is specifically brought to the notice of the Contractor that time is critical on this project, and the construction period will be a major factor in the award of the tender. The Contractor shall programme his work so that disruption to the local residents is kept to a minimum. No additional payments will be considered for any difficulties, which may arise due to the presence or activities of the residents and farmers. It may be necessary to hold back the construction of certain sections of the water pipelines if the state of crops in the lands demands this. In this case the contractor will be expected to proceed with other sections of the pipelines until the affected sections become available. The situation will be assessed early in the contract so that the programme can be compiled accordingly, and negotiations entered into with the farmers if necessary. Furthermore, the contractor is to programme his works in conjunction with the nominated electrical and mechanical sub-contractor.

C3.1.7 Change in works

The ORTDM may, from time to time by order in writing without in any way vitiating the Contract or giving to the Contractor any claim for additional payment, require the Contractor to proceed with the execution of the works in such order as in his opinion may be necessary, and may alter the order of or suspend any part of the Works at such time and times as he may deem desirable and the Contractor shall not, after receiving such written order, proceed with work ordered to be suspended until he shall receive a written order to do so from the ORTDM. Where the work must of necessity be carried out in conjunction with work of other Contractors, or with that of the Employer, it shall be co-ordinated and arranged in such a manner as to Interfere as little as possible, with the progress of such other work so as to offer every reasonable facility to other Contractors or to employees of the Employer.

C3.1.8 Sub-Contracting

No work may be sub-contracted to another party unless approval is given by the ORTDM in writing. The Contractor is to submit to the ORTDM in writing a request for appointment of a particular sub-contractor. Accompanying this request is to be the full detail of the sub-contractor, including:

- Previous experience
- Work which will be sub-contracted to him/her
- Approximate value of the work to be sub-contracted

C3.2 ENGINEERING

C3.2.1 DESIGN

Design Item / Level of Design	Party Responsible for Design/ Supply of drawings
Up to details design and working drawings of all elements not detailed below	Employer
All Temporary works	Contractor
Mechanical Electrical shop drawings	Mech/Elec Sub-Contractor
Record Drawings	Contractor

(a) The Employer is responsible for the design of the permanent Works as reflected in the Contract Documents unless otherwise stated.

(b) The Contractor is responsible for the design of the temporary Works and their compatibility with the permanent Works.

(c) The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

C3.2.2 CONTRACTOR'S DESIGN

Where contractor is to supply the design of designated parts of the permanent Works or temporary Works, he shall supply full working drawings supported by a professional engineer's design certificate.

C3.2.3 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates, or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

All information in possession of the Contractor, required by the Engineer and/or the Engineer's Representative to complete the as-built/record drawings, must be submitted to the Engineer's Representative before a Certificate of Completion will be issued.

The Drawings prepared by the Employer for the permanent Works are listed below. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

DESCRIPTION	DRAWING NUMBER
WWTW Site Layout	E19001-SP-NS-C01
WWTW Layout Plan	E19001-SL-NS-C02
Trial Pit Layout	E19001-SP-NS-C03
Chlorine Contact Chamber Plan Layout and Sections RC Details	E19001-CONC-S01
Chlorine Contact Chamber Base Reinforcing	E19001-RF-CONC-S01-1
Chlorine Contact Chamber Base Reinforcing	E19001-RF-CONC-S01-2
Chlorine Contact Chamber Plan Layout and Sections RC Details	E19001-CONC-S01-3
Chlorine Contact Tank	E19001-CONC-RS-S05
Inlet Works Sheet 1 of 2	E19001-CONC-CS-C01-1-2
Inlet Works Sheet 2 of 2	E19001-CONC-CS-C01-2-2
Primary Settling Tank	E19001-CONC-CS-C02
Denitrification Tank	E9001-CONC-NS-S13-0
Bio Filter	E19001-CONC-NB-C03
Clarifier Tank	E19001-CONC-RS-S04
Sludge Drying Beds	E19001-CONC-RS-C05
Primary Settling Tank RC Details 1 of 2	E19001-RF-CONC-S01-R1
Primary Settling Tank RC Details 2 of 2	E19001-RF-CONC-S01-R1/1
Primary Settling Tank Reinforcing 1 of 2	E19001-RF-CONC-S01-R1/2
Primary Settling Tank Reinforcing 2 of 2	E19001-RF-CONC-S01-R1/3
Sludge Beds Reinforcing	E19001-RF-CONC-S01-R1/4
WWTW Roads Layout	E19001-PLES-NS-C04
Care Taker House Plan	E19001-CONC-NS-S06
Store Room Plan	E19001-CONC-NS-S07
Office Plan	E19001-CONC-NS-S08
Guard House Plan	E19001-CONC-NS-S09
Road Crossing	E19001-CONC-NS-S10
Pump Sump	E19001-CONC-RS-S07

C3.3 CONSTRUCTION

C3.3.1 Work Specifications

C3.3.1.1 Applicable SANS 1200 Standard Specifications

The following SANS 1200 Standardized Specifications for civil engineering construction are applicable:

SANS 1200 A GENERAL
SANS 1200 AB ENGINEERS OFFICE
SANS 1200 C SITE CLEARANCE
SAND 1200 D EARTHWORKS
SANS 1200 DB EARTHWORKS (PIPE TRENCHES)
SANS 1200 DK GABIONS AND PITCHING

SANS 1200 G	CONCRETE (STRUCTURAL)
SANS 1200 GA	CONCRETE (SMALL WORKS)
SAND 1200 GB	CONCRETE (ORDINARY BUILDINGS)
SANS 1200 GE	PRECAST CONCRETE (Structural)
SANS 1200 L	MEDIUM PRESSURE PIPELINES
SANS 1200 LB	BEDDING (PIPES)
SANS 1200 LD	SEWERS

Any road re-instatement required? Section M, NO Finishes are included on SANS 1200 DB

The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications.

These have not been bound into the document but are available for inspection at the offices of the Consulting Engineers or can be obtained as follows:

- Standards South Africa, contactable at 012 428 6666

The Contractor shall have available for reference on site at all times a full set of the above specifications, together with any other to which they refer.

These specifications shall remain the property of the Contractor but shall be made available to the Engineer whenever required throughout the duration of the contract.

Project specific variations to these standardized specifications are included as Scope of Work: Part B. In the event of any discrepancy with a part or parts of the standard specifications, the bill of quantities or the drawings, the project specifications described in Scope of Work: Part B shall take precedence.

C3.3.2 SITE ESTABLISHMENT

C3.3.2.1 Services and Facilities provided by the Contractor

(i) The Contractor's camp site

The Contractor shall be as required to fulfil his obligations under the contract. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor by the Employer. The Contractor may, if he prefers to have a site camp and storage yard location other than that identified by the Employer, suggest an alternative location to the Employer, subject to approval by the Employer

(ii) Accommodation of Employees

The Contractor shall make his own arrangements to accommodate his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.

(iii) Power Supply, Water, and Other Services

The Contractor shall make his own arrangements concerning the supply of electricity power, water and all other services. No direct payment will be made for the provision of these services. The cost thereof shall be deemed included in the rates and amount tendered for the various items of work for which these services are required or in the Contractors Preliminary and General items.

(iv) Excrement disposal

The Contractor shall, at his own expense, be responsible for safely and hygienically dealing with and disposing of all human excrement and similar matter generated on the Site during the course of the Contract, to the satisfaction of the Engineer and the responsible health authorities in the area of the Site.

The Contractor shall further comply with any other requirements in this regard as may be stated in the Contract.

No separate payment will be made to the Contractor in respect of discharging his obligations in terms of this subclause and the costs thereof shall be deemed to be included within the Contractor's bidded Preliminary and General Items.

C3.3.2.2 Facilities provided by the Contractor for the Engineer

The Contractor shall provide on the Site, for the duration of the Contract and for the exclusive use of the Engineer and/or his Representative (as applicable), the various facilities described hereunder. All such facilities shall be provided promptly on the commencement of the Contract and failure on the part of the Contractor to provide any facility required in terms of this specification shall constitute grounds for the Engineer to withhold payment of the Contractor's bidded Preliminary and General items until the facility has been provided or restored as the case may be.

(a) Office accommodation

The Contractor shall provide on the Site an office for the exclusive use of the Engineer. Such office(s) shall comply with and be furnished in accordance with the requirements of subclause 3.2 of SANS 1200 AB. The Contractor shall maintain the office(s) in accordance with the requirements of subclause 5.2 of SANS 1200 AB.

Such office accommodation shall be provided within the Contractor's site establishment facilities.

(b) Site meeting venue

The Contractor shall provide within his own site establishment facilities, a suitably furnished office or other venue capable of comfortably accommodating a minimum

of six (6) persons at site meetings. The Engineer shall be allowed free use of such venue for conducting any other meetings concerning the Contract at all reasonable times.

(c) Contractor name boards

The Contractor shall provide, erect and maintain one contract nameboard at the commencement of the contract and at such positions and locations as directed by the Engineer, which nameboard shall, unless otherwise specified elsewhere in the Contract, comply with the recommendations for the standard board of the South African Association of Consulting Engineers, with regard to size, painting, decorating and detail, and the requirements described hereunder.

Each name board shall be made of tempered hardboard with a thickness of at least 12 mm, so braced on the reverse side as to prevent warping and shall be mounted on two or more, as necessary, firmly planted poles. The painting of the boards shall comply with the relevant requirements of CKS 193 and the colours of the paints shall be an acceptable match to the applicable colours given in SANS 1091.

The Contractor shall keep the contract name board in good state of repair for the duration of the Contract and shall remove them on completion of the Contract.

(d) Survey equipment and assistants

- Survey equipment

The Contractor shall, in accordance with the requirements of SANS 1200 AB (as amended) provide the following survey equipment for the exclusive use of the Engineer or his representative:

- One engineer's automatic level and legs (with current calibration certificate)
- One engineer's measuring wheel
- One engineer's metric staff
- One engineer's plastic tape 30m long
- One pocket steel tape 5m long

The Contractor shall keep the equipment insured throughout the Contract period against any loss, damage or breakage and shall indemnify the Engineer and the Employer against any claims in this regard.

Upon completion of the Works, the ownership of the equipment shall revert back to the Contractor.

The Contractor shall maintain the equipment in good working order and keep it clean throughout the Contract.

- Survey assistants

The Contractor shall, in accordance with the requirements of subclause 5.5 of SANS 1200 AB, make available to the Engineer or his representative, two (2) survey assistants.

(e) Electricity supply for the Engineer

All electricity supply to the Engineer's office(s) and laboratory (if applicable), whether provided by the Contractor by way of a reticulated supply from a local authority or other authorised electricity supply, or by way of on-site generators, shall be regulated by the Contractor to within limits such as to prevent damage due to fluctuations in the electrical current supply that may occur to any electrical plant and equipment provided by the Contractor or the Engineer.

The Contractor shall be liable for and pay to the Engineer on demand, all costs that the Engineer may incur in the repair or replacement of any electrical equipment provided by the Engineer on the Site. Reliance by the Contractor on the regulation of the electrical supply by the supplier or on current regulators fitted to generators shall not absolve the Contractor of his liabilities in terms of this Subclause and, where appropriate, the Contractor shall provide and install at his own cost, all such electrical current-regulating equipment as is necessary to prevent damage to the said equipment.

(f) Site instruction book

The Contractor shall keep a triplicate book for site instructions on the Site at all times.

(g) Transport for Engineer

The Contractor to provide one suitable vehicle for the exclusive use by the Engineer and his Assistant, for the duration of construction. As a minimum the vehicles shall be one tonne LDVs of 1800cc capacity with not greater than 100000km on the odometer. The contractor shall be responsible for all costs associated with the vehicles, including comprehensive insurance, maintenance, servicing and fuel. The distance covered should not exceed 4500km per vehicle per month on average.
The vehicle shall be leased in the name of the Contractor with preferred rental agency. Payments will be made through the provisional sum allowed.

(h) Accommodation for the Engineer

The Engineer will locate suitable hotel accommodation for the Engineer and his Assistant which shall be leased in the name of the Contractor. Monthly payments to the hotel will be made through the provisional sum allowed.

(i) Temporary Work

The Contractor shall carry out such temporary work, including necessary access, shoring of trenches and excavation etc. as he may require enabling the permanent

work to be constructed. He shall allow for the cost of all temporary works, including their removal, in his rates.

(j) Barricading of Excavation

All excavations in road reserve and in any other areas in close proximity to vehicular traffic are to be barricaded to the satisfaction of the Engineer.
All costs arising from these requirements are to be included in the tender rates

(k) Cellular Phone and Internet costs

A Provisional Sum has been included in the schedule for cellular phone, facsimile transmissions and internet usage costs for the Engineer's Representative.

The Engineer's representative will provide his own telephone for the contract. Payment will be based on call and rental costs, but excluding any deposits and installation costs which shall be priced under the preliminary and general items.

The Contractor will provide the Engineer's representative with a monthly 5GB bundle mobile internet contract for the duration of the project. Payment will be based on internet usage and associated contract costs, but excluding any deposits and installation costs which shall be priced under the preliminary and general items.

C3.3.3 Permits and wayleaves

The Employer shall be responsible to obtain all the wayleave required for this Contract.

C3.3.4 Plant and materials

The Employer shall not supply any plant or materials.
All materials shall comply with the requirements of the South African Bureau of Standards, and shall bear the official standardization mark. Where SANS standard does not exist for a certain material, or a material does not bear the official standardization mark, the Engineers approval of such material must be gained before use thereof.

C3.3.5 Construction Equipment

All equipment on site shall be in a good working order, and is to be in such a condition that it can achieve production rates which are typical of the industry standards.
Should any equipment, in the opinion of the Engineer, be substandard or breaks down frequently to such an extent that it affects the progress on the project, the Engineer may instruct the Contractor to replace such equipment.

C3.3.6 Features Requiring Special Attention

Government Regulations – Republic of South Africa (RSA)

The plant used in the execution of the Contract is to satisfy the requirements of the Factories, Machinery and Building Work Act (No. 22 of 1941) or any amendment thereof, including such regulations as may be framed thereunder at any time up to and including the date of completion of the Contract. The plant shall also comply with any other government regulations controlling the installation and operation of the entire equipment.

If any additional work is ordered by a Government inspector to make the plant comply with regulations referred to above, the Contractor shall forthwith carry out such work at his own cost.
The Contractor must acquaint himself with all conditions and regulations laid down by the Government and Local Authorities for electricity, health, sanitation on site and traffic regulations.

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

(b) Health & Safety
As per Clause 4(1)(a) of the Construction Regulations (2003) a Health and Safety Specification is included in this contract as Particular Specification PA. The Contractor will take the requirements of this specification into account during the tendering and execution of the works.
Furthermore, any reference to the "Machinery and Occupational Safety Act" in any specification shall be replaced with reference to the "Occupational Health and Safety Act, 1993".

(c) Environmental Management Requirements

The Contractor will be responsible for implementing and managing an Environmental Management Plan. Refer to Particular Specification PB, which defines the roles and responsibilities of various members of the Contractor's staff in terms on the Environmental Management Plan.

(d) Traffic Accommodation

Interruptions to traffic on public roads will be kept to a minimum and where interruptions are unavoidable they will be done with the full complement of warning signs as required by the Road Traffic Sign Manual.

(e) Dealing with other Contractors

The reticulation services contractors will connect to works by this bulk services contractor. Close liaison will be required. At an early stage of construction, the contractor will arrange a meeting with the reticulation services contractors and resolve and document any tie-in issues.

(F) CONTRACTORS PROGRAMME

Clause 12 of the Conditions of Contract requires the Contractor to submit a programme for the execution of the works. In addition to the requirements of clause 12 the format and information shown shall comply to the following.

The Contractor shall submit his programme in a bar chart format showing clearly the following:

- The various stages of work planned to be completed per week.
- Critical path activities.
- Anticipated value of work to be done during each month.
- His labour resources schedule which must distinguish between the Contractor's permanent labour and his temporary local labour employment.
- The lead time for training of local labour.

When drawing up his programme, the Contractor shall, among other issues, take into consideration and make allowance for:

- Expected weather conditions and their effects.
- The requirements and effects of employing labour intensive construction methods.
- The accommodation and safeguarding of public access and traffic.
- The lead time required for compliance with the Environmental Management Plan
- The lead time required for compliance with the Health and Safety Specification

Failure to produce a programme may prejudice the Contractor in any claim for an extension of time.

TESTING AND QUALITY CONTROL

(I) CONTRACTOR TO ENGAGE SERVICES OF AN INDEPENDENT LABORATORY

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Engineer in deciding whether the quality of materials utilised and workmanship achieved by the Contractor comply with the requirements of the Specifications. The aforegoing shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Engineer or by the Contractor.

The Contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the Contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Engineer with copies of the results of all such testing carried out by the independent laboratory.

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" (as defined in subclause PSA 7.2) which is not under the

management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

(II) ADDITIONAL TESTING REQUIRED BY THE ENGINEER

In addition to the provisions of subclause C3.3.2.5(b)(i): Contractor to engage services of an independent laboratory, the Engineer shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in subclause C3.3.2.5(b)(i), at such times and at such locations in the Works as the Engineer shall prescribe. The Contractor shall promptly and without delay arrange with the independent laboratory for carrying out all such additional testing as required by the Engineer, and copies of the test results shall be promptly submitted to the Engineer.

(III)COSTS OF TESTING

(a) Tests in terms of subclause C3.3.2.4(c)(i)

The costs of all testing carried out by the independent laboratory in accordance with the requirements of subclause C3.3.2.4(c)(i), above shall be borne by the Contractor and shall be deemed to be included in the bidded rates and prices for the respective items of work as listed in the Schedule of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out in terms of sub-clause C3.3.2.4(c)(i).

Where, as a result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work, it becomes necessary to carry out additional tests (eg re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

(b) Subcontractors

All matters pertaining to subcontractors (including Nominated Subcontractors) and the work executed by them shall be dealt with directly between the Engineer and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Engineer will not become involved.

(c) Access to properties

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 8.1.2 of the Conditions of Contract.

If, as a result of restricted road reserve widths and the nature of the work, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties.

Notwithstanding the aforegoing, the Contractor may, with the prior approval of the Engineer (which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven and properties to close off part of a street, road, footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration, and reopens the route as punctually as possible. Where possible, such streets, roads, footpaths and entrances shall be made safe and reopened to traffic overnight. Such closure shall not absolve the Contractor from his obligations under the Contract to always provide access. Barricades, traffic signs, drums and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions

(e) Existing residential areas

Electricity and water supply interruptions in existing residential areas shall be kept to a minimum. The Engineer's approval shall be obtained prior to such interruptions and residents shall be notified in writing at least 24 hours but not more than 48 hours in advance. Supplies shall be normalised by 16:00 on the same day.

(f) Labour-intensive competencies of supervisory and management staff

Contractor having a CIDB contractor grading designation of 5CE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a contractor grading designation of 1CE, 2CE, 3CE and 4CE shall have personally completed and be registered on a skills programme for the NQF level 2. All other site supervisory staff in the employ of such contractors must have completed, or be registered on a skills programme, for the NQF level 2unit standards or NQF level 4unit standards.

Table 1:Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour-intensive Construction systems and Techniques to Work Activities	This unit standard must be completed, **and**
		Use Labour-intensive Construction Methods to Construct and Maintain roads and Stormwater Drainage	one of these 3-unit standards be used
		Use Labour -intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-intensive Construction methods to Construct, Repair and Maintain Structures	

Personnel	NQF level	Unit standard titles	Skills programme description
Foreman / supervisor	4	Implement Labour-intensive Construction systems and Techniques	This unit standard must be completed, **and**
		Use Labour-intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	any one of these 3unit standards be used
		Use Labour-intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (ie the contractor's most senior representative who is resident on the site)	5	Manage Labour-intensive Construction Processes	Skills Programme against this single unit standard

(g) Employment of unskilled and semi-skilled workers in labour-intensive works

(i) REQUIREMENTS FOR THE SOURCING AND ENGAGEMENT OF LABOUR

1) Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

2) The rate of pay set for the SPWP is ***As Per Government Gazette*** per task or per day.

"In accordance with the Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes (clause 10.4), the public body must set a rate of pay (task-rate) for workers to be employed on the labour-intensive projects.

Clause 10.4 requires that the following should be considered when setting rates of pay for workers:

10.4.1 The rate set should take into account wages paid for comparable unskilled work in the local area per sector, if necessary.

10.4.2 The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure a reasonable quality of work. It should not be more than the average local rate to ensure people are

not recruited away from other employment and jobs with longer-term prospects.

10.4.3 Men, women, disabled persons and the aged must receive the same pay for work of equal value."

3) Tasks established by the contractor must be such that:

(aa) the average worker completes 5 tasks per week in 40 hours or less; and
(bb) the weakest worker completes 5 tasks per week in 55 hours or less.

4) The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

5) The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and/or who come from households:

(aa) where the head of the household has less than a primary school education;(bb) that have less than one full-time person earning an income;(cc) where subsistence agriculture is the source of income;
(dd) those who are not in receipt of any social security pension income.

(ii) SPECIFIC PROVISIONS PERTAINING TO SANS 1914-5

1) Definition

Targeted labour: Unemployed persons who are employed as local labour on the project.

(2) Contract participation goals

(aa) There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
(bb) The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task-rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

(3) Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

(4) Variations to SANS 1914-5

(aa) The definition for net amount shall be amended as follows: Financial value of the contract upon completion, exclusive of any value-added tax or sales tax which the law requires the employer to pay the contractor.

(bb) The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

TRAINING OF TARGETED LABOUR

(a) The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

(b) The cost of the formal training of targeted labour, will be funded by the provincial office of the Department of Labour. This training will take place as close to the project site as practically possible. The Contractor must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The Employer must be furnished with a copy of this request.

(c) A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works – Cinderella Makunike, Fax: 012 328 6820 or email cinderella.makunike@dpw.gov.za, Tel: 083 677 4026.

(d) The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he/she is employed for 4 months or more.

(e) The Contractor shall do nothing to dissuade targeted labour from participating in training programmes.

(f) An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of 1.3.4 above.

(g) Proof of compliance with the requirements of 1.3.1 to 1.3.3 must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

(h) Employment of local labour

It is a specific criterion of this project that should as far as possible adheres to RDP principles, and to meet these principles the following procedures will be followed:

All labour is to be sourced from the O. R. TAMBO District Municipality area of jurisdiction and the Contractor may only bring in key personnel from outside this area.

The bidders shall make maximum use of the human resources existing in the local community. The bidders shall apply to the employment labour desk, conveyed by the steering committee for details of those labours who are available in the area of work and shall provide preference to those labours identified by steering committee.

The employment of casual labour will be done in co-operation with community leaders and local structures. The bidder shall ensure that all remuneration paid to employees is in line with the relevant sectorial determination in terms of the Basic Conditions of Employment Act, No 75 of 1997, as determined by the Department of Labour.

(i) Monthly statements and payment certificates

The statement to be submitted by the Contractor in terms of Clause 6 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

For the purposes of the Engineer's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Subclause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

(j) Construction in restricted areas

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices bidded will be deemed to include full compensation for any difficulties

encountered by the Contractor while working in restricted areas. No extra payment nor any claim for payment due to these difficulties will be considered.

(k) Notices, signs, barricades and advertisements

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his bidded rates.

The Engineer shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works if in his opinion it is unsatisfactory, inconvenient or dangerous.

(l) Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates bidded for the related items of work.

The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

(m)Inspection by engineer

No stage of construction shall be proceeded with until the Engineer or his representative has examined and approved the previous stage. If any work is covered or hidden from view before the Engineer has inspected

same, the Contractor shall at his own cost open the covered work for inspection. The Contractor shall also be responsible for making good any work damaged by such uncovering

C3.3.7 Extension of time due to abnormal rainfall

(a) Extension of time in respect of delays resulting from wet climatic conditions on the Site will only be considered in respect of abnormally wet climatic conditions and shall be determined for each calendar month or part thereof, in accordance with the formula given below:

V = (Nw - Nn) + (Rw - Rn)/X
in which formula the symbols shall have the following meanings:

V = Potential extension of time in calendar days for the calendar month under consideration:
If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.
When the value of V for any month exceeds the number of days in the particular month, V will be the number of days in the month.

Nw = Actual number of days in the calendar month under consideration on which a rainfall of Y mm or more was recorded on the Site

Nn = Average number of days, derived from existing records of rainfall in the region of the Site, on which a rainfall of Y mm or more was recorded for the calendar month

Rw = Actual rainfall in mm recorded on the Site in an approved rain gauge for the calendar month under consideration

Rn = Average rainfall in mm for the calendar month, derived from existing records of rainfall in the region of the Site

The factor (Nw - Nn) shall be deemed to be a fair allowance for variations from the average number of days during which the rainfall exceeds Y mm.

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

(b) The rainfall records at rainfall station number 0154143X Qumbu Prison Gauge for the period 1996 to 2004 are reproduced in the accompanying table, and the monthly averages (Rn and Nn) for this period shall, for the purposes of this Contract be taken as normal and as the values to be substituted for Rn and Nn in the formula above. The values of X and Y shall be 20 and 10 respectively.

The potential extension of time V has been calculated for each month and year of the period concerned to indicate the possible effect of the rainfall formula. The values of V were obtained by applying the rainfall formula and using the actual rainfall figures and the calculated values of Rn and Nn indicated in the table.

(c) The Contractor shall, at his own cost, provide and erect on the Site at a location approved by the Engineer, an approved rain gauge, which shall be fenced off in a manner which will prevent any undue interference by workmen and others. The Contractor shall, at his own cost, arrange for the reading of the rain gauge on a daily basis for the duration of the Contract. The gauge readings, as well as the date and time at which the reading was taken shall be recorded in a separate record book provided by the Contractor for this purpose. All entries in the rainfall record books shall be signed by the person taking the reading and the gauge shall be properly emptied immediately after each reading has been taken. If required by the Engineer, the Engineer shall be entitled to witness the reading of the gauge.

(d) The Contractor's claims in terms of Subclause 5.12.1 of the Conditions of Contract for extension of time in respect of delays resulting from wet climatic conditions on

the Site during each month, shall be submitted in writing to the Engineer monthly; provided always that

(i) the period allowed to the Contractor in terms of Clause 10.1 of the Conditions of Contract in which to submit his claim for each month shall be reduced to seven (7) days, calculated from the last day of the month to which the claim applies; and

(ii) the 28-day period allowed to the Engineer in terms of Subclause 5.12.1 of the Conditions of Contract in which to give his ruling on the claim, shall be reduced to fourteen (14) days.

The Contractor's monthly claim shall be accompanied by a copy of the signed daily rainfall readings for the applicable month.

(e) The extent of any extension of time which may be granted to the Contractor in respect of wet climatic conditions (whether normal or abnormal) shall be determined as the algebraic sum of the "V" values for each month between the Commencement Date and the Due Completion Date of the Contract, calculated in accordance with subclause C3.3.2.6(a) above; provided always that rainfall occurring within the period of the Contractor's Christmas shut-down period (referred to in Subclause 1.6 of the Conditions of Contract) shall not be taken into account in the calculation of the monthly "V" values

(i) rainfall occurring during any period during which the Contractor was delayed due to reasons other than wet climatic conditions on the Site, and for which delay an extension of time is granted by the Engineer, shall not be taken into account in the calculation of the monthly "V" values;

(i) if the algebraic sum of the "V" values for each month is negative, the time for completion will not be reduced on account of subnormal rainfall, and

(iii) where rainfall is recorded only for part of a month, the "V" value shall be calculated for that part of the month using pro rata values for Nn and Rn.

(f) The Engineer shall, simultaneous with granting any extension of time in terms of this clause, revise the Due Completion Date of the Contract to reflect an extension of time having been granted in respect of wet climatic conditions, to the extent of the algebraic sum of all the "V" values for all the preceding months of the Contract, less the aggregate of the "Nn" values for the remaining (unexpired) months of the Contract (viz less aggregate of the potential maximum negative "V" values for the remaining Contract Period). Thus, provided that where such period is negative, the Due Completion Date shall not be revised.

(g) Any extension of time in respect of wet climatic conditions granted in terms of this clause shall not be deemed to take into account delays experienced by the Contractor in repairing or reinstating damage to or physical loss of the Works arising from the occurrence of abnormal climatic conditions. Extension of time in respect of any such repairs or reinstatement regarding damage shall be the subject of a separate application for extension of time in accordance with the provisions of Clause 42 and Clause 48 of the Conditions of Contract.

RAINFALL TABLE

The following are the most reliable values of Nn and Rn available.

Data supplied by the South African Weather Service

Qumbu Prison Gauge 0154143X

Data Period 1996 to 2004

MONTH	**Nn**	**Rn**
JANUARY	9.3	112.2
FEBRUARY	6.0	100.5
MARCH	7.4	111.8
APRIL	4.9	52.5
MAY	3.6	36.4
JUNE	1.3	65.7
JULY	1.6	53.5
AUGUST	3.0	27.4
SEPTEMBER	4.8	68.4
OCTOBER	6.9	54.2
NOVEMBER	7.7	129.0
DECEMBER	10.3	101.7
	66.6	**913.3**

(h) The Contractor shall make due allowance within his programme submitted in terms of Clause 5.6 of the Conditions of Contract, for a total anticipated delay to items on the critical path resulting

(i) from wet climatic conditions, of twenty-three days (67) normal working days (as defined in Clause 5.8.1 of the Conditions of Contract) during the Contract.

(j) Extension of time, if granted by the Engineer, will be determined as the aggregate number of normal working hours for which all progress on the item or items on the critical path was brought to a halt as a result of wet climatic conditions, less the number of normal working days specified in sub clause (d) above.

(k) In determining the revised Due Completion Date of the Contract, the Engineer shall add the equivalent number of normal working days delay determined in accordance with sub clause (e) and all intervening normal non-working days to the prevailing Due Completion Date.

C3.3.8 Accommodation of traffic

It is expected of the Contractor to ensure that the free flow of traffic is possible throughout the construction period.

The Contractor is to provide all necessary barricades, signs and lighting in accordance with the stipulations of the South African Road Signs Traffic Manual, and the Protective Services of the O. R. TAMBO District Municipality. All work is to be to the satisfaction of the Engineer.

C3.3.9 As-Built Data and Record Drawings

The Contractor shall submit the following "As Built" data to the Engineer's Representative to enable the Engineer's Representative to complete the required Record Drawings before a Certificate of Completion will be issued:

- Marked Up General Arrangement drawings showing the following:
- Invert levels
- Coping Levels
- Any deviations from the original design
- The positions of all manholes and collection / distribution chambers
- The invert level, diameters and material of construction of all inlet and outlet pipe-work.

The above information is to be given to an accuracy of three decimal places and is to be surveyed by a suitably qualified person. The survey shall be provided in both dxf and dwg *.csv & tot format.

Suitable checks on the accuracy of the information provided may be carried out by the Engineer's Representative and should any of the information provided be found to be inaccurate or untrue, the Employer reserves the right to withhold payment or to employ the services of an engineering surveyor to re-survey all the works listed above, at the Contractor's expense.

The Employer shall request a minimum of three quotations from three independent engineering surveyors of his choice, and the lowest quotation will be appointed and the cost thereof will be deducted from monies owing to the Contractor.

C3.3.10 CPG APPLICABILITY

The Contract Participation Goals (CPG) target is applicable to all MIG contracts to be adjudicated through the O. R. TAMBO District Municipality procurement process and shall be achieved through the following mechanisms:

- Main Service Provider may propose a suitable targeted enterprise or CPG partner/s but O. R. TAMBO District Municipality reserves the right to provide or arrange a targeted enterprise or CPG partner/s to work with the successful company.
- In cases where CPG works has been already identified, the successful tenderer will be allocated a CPG partner/s as deemed necessary by the Engineer.
- This clause will only be applicable if it is feasible to use targeted enterprise or CPG partner

Professional Service Providers						
Type of Enterprise		**Annual Turnover**	**Black Ownership**	**Tax Clearance Certificate**	**Minimum Full Time Technical Employees**	**CPG Target**
Targeted Enterprise (TE)	Qualifying Small Enterprise	R5 m ≤ TE ≤R15 m	> 50%	Required	>6	30% Min.
	Emerging Micro Enterprise	TE < R5 m	> 50%	Required	>3	

For each monthly invoice submitted by the Service Provider, the Targeted Enterprise(s) hours and costs per function must be clearly articulated to enable the CPG targets to be easily and regularly monitored.

The Service Provider must withhold 10% retention of the Targeted Enterprise(s) fees until the acceptance of the project.

The Service Provider must pay the amount due to the Targeted Enterprise(s) within 14 days of receiving payment from the Employer.

SCOPE OF WORK

PART B: VARIATIONS TO THE STANDARD SPECIFICATIONS

In certain clauses the standard specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications required for this particular contract.

The number of each clause in this part of the project specifications consists of the prefix PS followed by a letter corresponding to the part of SABS/SANS 1200 being changed and a number corresponding to the number of the relevant clause in the standard specifications.

The number of a new clause which does not form part of a clause in the standard specifications and which is included herein, is also prefixed by PS followed by a letter corresponding to the part of SABS/SANS 1200 being added, followed by a new number. The new numbers follow on the last clause number used in the relevant section of the standard specifications.

GENERAL (SANS 1200A)

In all the SABS/SANS 1200 series specifications

Change all references to "SABS 1200" to read "SABS/SANS 1200"

Under the APPLICATION heading Change references to "Portion 2" to read "Part B"

Change references to "Project Specifications" to read "Scope of Works"

SABS/SANS 1200 A – GENERAL

PSA 4.2 Contractors Offices, Stores and Services

Add the following paragraphs:

"The Contractor will not be permitted to provide housing accommodation for his employees on site.

The Contractor will have the following services available:

One Photocopy and scanning machine

An e–mail access for 2 users

The Scanner and photocopy machine will be available to the Engineer for use.

PSA 5.1.1 SETTING OUT OF THE WORKS

(i) The Contractor shall be fully responsible for the setting out of the works.

(ii) Although the drawings may show the approximate positions of existing works and services, neither the Employer nor the Engineer accept any responsibility for the accuracy thereof.

It shall be the duty of the Contractor to search for and make himself acquainted with the actual locations and ownership of existing works and services before any construction work is commenced.

Where, during the course of the contract, services have been located and exposed, they shall be securely shored and protected, and the Contractor shall take adequate measures to prevent any damage occurring to them.

Furthermore, any damage done to existing works and services shall be reported immediately to the authority concerned and the Engineer shall be notified accordingly in writing.

(iii) Before commencing any construction, the Contractor shall check the relative positions and levels of all reference pegs, bench marks and line pegs and inform the Engineer of any discrepancy.

The Contractor shall advise the Engineer of any conflict between the position of any part of the Works and an existing feature.

PSA 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS

Replace the provisions of clause 5.2 with the following:

a) *General barricading:*

Wherever the works affect the operation or safety of the general public, the Contractor shall barricade off the excavations with 1,8m fencing standards driven 0,6m into the ground at 4,0m centres and two strands of wire with red & white plastic tape strung between standards. The H&S requirements shall apply in addition to this

b) *Roadworks barricading:*

Wherever the Works affect the operation and safety of public traffic, the Contractor shall barricade off the excavations with white painted 210 litre oil drums at 2,0m centres and two strands of red & white plastic tape strung between two drums. A full complement of metal traffic signs shall be erected and maintained to the satisfaction of the Employer's Agent. The signs shall be in accordance with the latest issue of South African Road Traffic Signs Manual.

SCHEDULE OF WORKS FOR LABOUR-INTENSIVE METHODS OF CONSTRUCTION (LIC)

The following work has been identified within the scope of works for the construction of Qumbu WWTW and suggested as possible work to be undertaken utilising labour-intensive methods in accordance to the Labour Based methods and technologies for employment intensive construction work document by CIDB.

The following table is an extract of the Bill of Quantities and details possible work to be carried utilising LIC methods. Please note that the work allocated to LICs is inclusive but not limited to the suggested items below.

The rate is to be based on the use of Local Labour and shall include for supervision and management of personnel by the main contractor as per LIC Methods of Construction Reference above.

This rate shall include for the supply of tools, equipment and health and safety requirements by the labour force.

O R TAMBO DISTRICT MUNICIPALITY		
QUMBU WWTW & SEWAGE RETICULATION PHASE 1		
LIC		
SCHEDULE B - SITE CLEARANCE		
ITEM NO	PAYMENT	DESCRIPTION
2.3	8.2.4	Reclear surfaces (only on instruction from the Engineer) LIC Methods
SCHEDULE C: STRUCTURES - BULK EXCAVATION		
ITEM NO	PAYMENT	DESCRIPTION
3.4	8.3.3	RESTRICTED EXCAVATION (a) Excavation by hand, and dispose surplus on site. Excavation and hand finishing for wall footings, subsoil drains and channels
SCHEDULE G: STRUCTURES - BIO-FILTERS		
ITEM NO	PAYMENT	DESCRIPTION
7.9 7.10		Lay and bed Loffelstein L500 retaining wall including placing of no fines concrete behind walls Lay and bed Loffelstein L300 retaining wall including placing of no fines concrete behind walls
ITEM NO	PAYMENT	DESCRIPTION
11.3	PSD 8.3.3	Restricted Excavations Excavate in all materials and use for embankment or backfill or dispose, as ordered
SCHEDULE L - MEDIUM PRESSURE PIPELINES		
ITEM NO	PAYMENT	DESCRIPTION
12	SANS 1200 LD PS D	SEWERS EXCAVATION

	PSDB 1	(a) Excavate in soft materials for trenches, backfill, compact and dispose of surplus/unsuitable material for pipes for the following:
12.1		Exceeding 0m but not 1.0m
12.2		Exceeding 1.0m but not 2.0m
SCHEDULE L - MEDIUM PRESSURE PIPELINES		
ITEM NO	PAYMENT	DESCRIPTION
	SABS 1200 L	PIPELINES (LIC Methods)
	PSL 4.1	Handle, lay and bed (Class C bedding) couplings,the following pipes:
12.11		DN 200mmØ uPVC Pipe Class 9
12.12		DN 110mmØ uPVC Pipe Class 9
12.13		DN 90mmØ uPVC Pipe Class 9
SCHEDULE P - ROADS AND STORMWATER		
ITEM NO	PAYMENT	DESCRIPTION
16	SANS 1200C	SITE CLEARANCE (LIC methods)
16.1	8.2.1	Clear and grub road reserve using labour intensive methods (areas defined by engineer).
	8.3.7	Cut to spoil or stockpile from undercuts / embankments.
16.7		(a) soft excavation
	SANS 1200 LE	STORMWATER DRAINAGE (LIC Methods)
	8.3.2	(a) Excavate in all materials for trenches, compacted to 90% MOD AASHTO and dispose of surplus material (labour intensive methods)
	SABS 1200DB	EARTHWORKS (PIPES TRENCHES)
		(i) For 600 diameter pipes
16.22		(b) Exceeding 1.0m but not 2.0m
16.23		(c) Exceeding 2.0m but not 3.0m

SCHEDULE R - SEWER PIPELINES TO NEW ELEMENTS

ITEM NO	PAYMENT	DESCRIPTION
	SABS 1200 L	PIPELINES (LIC Methods)
	8.2.1	Handle, lay and bed (Class C bedding) complete with couplings,the following pipes:
18.14		DN 315mmØ uPVC Pipe Class 51
18.15		DN 250mmØ uPVC Pipe Class 51
18.16		DN 200mmØ uPVC Pipe Class 51
18.17		DN 160mmØ uPVC Pipe Class 51
18.18		DN 110mmØ uPVC Pipe Class 51

ITEM NO	PAYMENT	DESCRIPTION
19	SANS 1200 DB	SITE CLEARANCE (LIC Methods)
19.1		(a) Clear and grub vegetation, hedges, shrubs and trees not exceeding 200mm girth etc.
19.2		(b) Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 1m girth etc.
19.6	8.3.2 PSD 1.1	Extra over for excavating in streams and environmentally sensitive areas
19.7	8.3.2	Excavate and dispose of unsuitable material in trench bottom (Provisional)
19.8	8.3.3.1	Make up deficiency in backfill material obtained from site
19.9	8.3.3.3	Compaction in road reserves

SCHEDULE S - WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION
	SABS 1200 L	PIPELINES
	8.2.1	Handle, lay and bed (Class C bedding) complete with couplings, the following pipes:

19.14		DN 50mm Ø HDPe Pipe to SANS 4427-2 Class 10
19.15		DN 32mm Ø HDPe Pipe to SANS 4427-2 Class 10
19.16		DN 20mm Ø HDPe Pipe to SANS 4427-2 Class 10

SCHEDULE S - WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION
		BULK WATER METERS AND CHAMBERS (SMMEs)
19.24		Supply all materials and labour and construct water meter chamber complete inclusive of all fittings as per drawings
	8.2.8	ANCHOR/THRUST BLOCKS
19.27		Supply all materials, labour, plant and construct 25MPa concrete Anchor/Thrust blocks and pedestals
19.28	8.2.9	Marker Posts

PSA 5.9 SMME CONSTRUCTION WORK

Add the following
The bidder will not identify and request quotes from the SMME's; the Employer will do the selection for a number of SMME's from the list of SMME's in their database and quotes will be requested from them. The database comprises of Grade 1CE to grade 3CE SMME's. The type and amount of work will be taken into consideration when doing the selection.

The Contractor shall sign GCC 2015 Contracts with the SMME's.

SMME's shall deliver to the Contractor, the type of security for the due performance of the contract.

The SMME's shall prepare and submit Environmental method statements and a Health and Safety Plan to the Contractor, assisted by the Contractor.

The SMME's shall prepare and submit a works programme, assisted by the Contractor.

The Contractor will be responsible for training, monitoring and supervision of the SMME's. Monitoring and supervision will involve ensuring good quality of the work done by the SMME's, cash flow monitoring, checking work against programme during construction. The Contractor will be responsible for ensuring timeous delivery of a quality product. All interactions will be documented in the form of minutes of the meetings, instructions and records of discussions with the Employer. All non-conformances to be documented and mitigation will be discussed with all parties soon after.

SCHEDULE OF WORKS FOR SMMES

The following work has been identified within the Scope of Works for the construction of Qumbu Wastewater Treatment Works and suggested as possible work to be undertaken by SMMEs. The following table is an extract of the Bill of Quantities and details possible work to be carried out by SMMEs. Please note that the work allocated to SMMEs is inclusive but not limited to the suggested items below.

The rate on all items below shall be inclusive of supervision, management and mark-up by the main contractor.

The rate shall include the supply of materials, tools and equipment, health and safety requirements by the main contractor and allow for establishment required by SMMEs.

SCHEDULE L - MEDIUM PRESSURE PIPELINES		
ITEM NO	PAYMENT	DESCRIPTION
Brought Forward		
	8.2.9	a) Brickwork (SMME)
12.45		1) 220 mm brickwork
12.46		2) 110mm brickwork
12.47		b) Plaster - 12mm
12.48		c) Benching
SCHEDULE O : NEW BUILDINGS		
ITEM NO	PAYMENT	DESCRIPTION
15		ON SITE BUILDINGS (SMMEs) Subcontract on site buildings as per Drawings. Item 15.1 to 15.5 to Local SMMEs.
15.1		Office Building
15.2		Care Taker House
15.3		Chlorine Storage and Dosing Building
15.4		MCC Pannel Control Building
15.5		Guard Hut
ITEM NO	PAYMENT	DESCRIPTION
16	SANS 1200C	SITE CLEARANCE

16.1 SMME/LIC	8.2.1	Clear and grub road reserve using labour intensive methods (areas defined by engineer)
	SABS 1200DM	EARTHWORKS (ROADS,SUB-GRADE)
16.2 SMME		(a) Roadbed preparation and compaction of material to 90% MOD AASHTO to a depth of 150mm
		(b) In place treatment of roadbed in hard material
16.3 SMME		(1) Ripping
	8.3.4	Cut to fill, borrow to fill
16.4 SMME	8.3.4	(a) (i) Cut to fill formation level and compacted to 93% MOD AASHTO max. density measured in fill
16.5 SMME		(ii) Borrow to fill for formation and undercuts from stockpile
16.6 SMME	8.3.6	Extra over item 8.3.4 for excavation and breaking down material in hard rock
	8.3.7	Cut to spoil or stockpile from undercuts / embankments.
16.7 SMME/LIC		(a) soft excavation
16.8 SMME		(b) Hard excavation
	SANS 1200 GA	CONCRETE (SMALL WORKS)
16.9 SMME		(a) 15 MPa mass concrete
16.10 SMME		(b) 20 MPa concrete edge beam
	SANS 1200 ME	SUB-BASE
	8.3.3	Construct the subbase course with material obtained from commercial sources:
16.11 SMME	PSME 3	(a) 150mm G5 layer compacted to 95% MOD AASHTO Density in Roadway

Total Carried Forward

O R TAMBO DISTRICT MUNICIPALITY
QUMBU WWTW & SEWAGE RETICULATION PHASE 2

ITEM NO	PAYMENT	DESCRIPTION
Brought Forward		
	SANS 1200 MF	BASE
	8.3.3	Construct Base with material from commercial sources
16.12 SMME		(a) Stabilised Base course using a 150mm G6 gravel layer compacted to 98% MOD AASHTO Density in Roadway
	8.3.5	Process Base material by:
16.13 SMME		(d) Stabilization
	8.3.8	Stabilizing agent
16.14 SMME		(a) Road Lime
16.15 SMME		(b) Portland Cement
Total Carried Forward		

O R TAMBO DISTRICT MUNICIPALITY
QUMBU WWTW & SEWAGE RETICULATION PHASE 2

ITEM NO	PAYMENT	DESCRIPTION
Brought Forward		
	SANS 1200 LC	SECTION : CABLE DUCTS
	8.2.2	EXCAVATION
16.16 SMME		(a) Excavate in all materials for trenches, backfill, compact and dispose of surplus
16.17 SMME		(b) Extra-over item (a) above for: Hard rock excavation
16.18 SMME		(c) Excavate unsuitable material from trench bottom and dispose of it
	8.2.5	SUPPLY, LAY, BED, AND PROVE DUCTS

16.19 SMME		(a) 110 diameter ducts for electrical
16.20 SMME	8.2.6	Imported Bedding, where ordered (Selected granular material)
	8.2.8	CABLE MARKERS
16.21 SMME		(b) Kerb marks
	SANS 1200 LE	STORMWATER DRAINAGE
	8.3.2	(a) Excavate in all materials for trenches, compacted to 90% MOD AASHTO and dispose of surplus material (labour intensive methods)
	SABS 1200DB	EARTHWORKS (PIPES TRENCHES)
		(i) For 600 diameter pipes
16.22 SMME/LIC		(b) Exceeding 1.0m but not 2.0m
16.23 SMME/LIC		(c) Exceeding 2.0m but not 3.0m

ITEM NO	PAYMENT	DESCRIPTION
	SABS 1200DK	GABIONS (SMMES)
16.24	8.2.1	Surface preparation for bedding of gabions / Reno mattress
16.25		(a) Construct 150mm thick reno mattress
16.26	8.2.4	Bidum U24 or similar approved
	8.2.5	Pitching (SMMES)
16.27		(a) 100mm grouted stone pitching in maximum 1:1.5 slopes
	8.2.1	Provision of bedding material from trench excavations
16.28		(a) Selected granular material
16.29		(b) selected fill material
	8.2.2.3	Imported from commercial sources
16.30		(a) Selected granular material

	SABS 1200LB	BEDDING (PIPES) (LIC Methods)
	SABS 1200LE	STORMWATER DRAINAGE
	8.2.1	PIPES (SMMEs)
	PSLE 2	Handle,lay and bed `ogee` pipes to SABS 677 on class C bedding
16.31		(a) 600mm diameter class 100D
	8.2.6.1	Inlet, outlet, transition and similar structures
16.32		(c) Manhole (Constructed complete as per details on Drawing)
		(e) Headwalls for the following items constructed complete as per details on drawing)
16.33		(i) 600 diameter pipes
	8.2.7	Trimming of Excavations for concrete-lined open drains in:
16.34		(a) Soft material
16.35	8.28	Cast-In-situ concrete lining to open drains (20/19 concrete)

ITEM NO	PAYMENT	DESCRIPTION
Brought Forward		
	8.2.9	Formwork to Cast-In-situ Concrete lining of open drains
		(i) Concrete V Drains
16.36 SMME		(a) To sides with formwork on both internal and external faces
16.37 SMME		(b) To ends of slabs
16.38 SMME	8.2.12	Sealed joints in concrete lining of open drains
16.39 SMME	8.2.12	Steel Reinforcement (mesh Ref. 193)
SCHEDULE Q - FENCING		

ITEM NO	PAYMENT	DESCRIPTION
17		FENCING (SMMEs)
	PSAA 4.1	Clear fence route
17.1		a) WWTW Site
17.2	PSSA 4.3	Supply and Erect concrete palisade posts standard duty complete including concrete footings as per Drawing
	PSAA 4.4	Supply and Erect of Pedestrian gate as per Drawing
17.3		a) WWTW Site
	PSAA 4.5	Supply and Erect of Vehicular gate as per Drawing
17.4		a) WWTW Site
		Supply galvanised locking chain 600mm long with 50mm links
17.5		a) WWTW Site
		Supply 63mm brass five tumbler padlock with four keys
17.6		a) WWTW Site
17.7		Remove existing wire mesh fencing and re-install as directed by the Engineer

SCHEDULE R - SEWER PIPELINES TO NEW ELEMENTS

ITEM NO	PAYMENT	DESCRIPTION
	8.2.3	MANHOLES (SMMEs)
18.35		For 315mm dia. pipeline
18.36		For 300mm dia. pipeline
18.37		For 250mm dia. pipeline
18.38		For 160mm dia. pipeline
18.39		For 90mm dia. pipeline
	8.2.8	ANCHOR/THRUST BLOCKS

		Supply all materials, labour, plant and construct 25MPa concrete Anchor/Thrust blocks and pedestals
	SANS LC 8.8.2	MARKER POSTS
18.40	8.2.9	Marker Posts

SCHEDULE S - WATER RETICULATION

ITEM NO	PAYMENT	DESCRIPTION
		BULK WATER METERS AND CHAMBERS (SMMEs)
19.24		Supply all materials and labour and construct water meter chamber complete inclusive of all fittings as per drawings
	8.2.8	ANCHOR/THRUST BLOCKS
19.27		Supply all materials, labour, plant and construct 25MPa concrete Anchor/Thrust blocks and pedestals
19.28	8.2.9	Marker Posts

PSA 5.9.1 TRAINING AND MANAGEMENT OF LOCAL SUB-CONTRACTORS (SMME'S)

PSA 5.9.1.1 Training of local sub-contractors (SMME's)

The main contractor will ensure that a mentorship and training programme be implemented for all sub-contractors (SMME's). The mentorship and training programme will be evaluated by the Employer's Agent prior to being implemented.

The provisional amount will be deemed to cover the costs for an expense's incurred for the training and mentorship programme of sub-contractors (SMME's).

PSA 5.9.1.2 Management of local sub-contractors (SMME's)

The Main contractor will be liable for the management of the sub-contractors (SMME's) in accordance with Clause 4.4 of the General Conditions of Contract for Construction Works, Third Edition (2015).

The tendered amount will be deemed to cover the costs for an expense's incurred for the management of the sub-contractors (SMME's).

PSA5.9.1.3

The provisional sum will be an incentive if the SMME works are completed to acceptable quality and on time without any claims for Extension of time due to SMME.

PSA 8.2.2 Time-Related Items

The Contractor will not be entitled to additional payment for time related Preliminary and General items for special non-working days.

PSA 8.3.4 Removal of Site Establishment

Add new payment item as follows:

Removal of site establishment……...Unit: Sum

The sum shall cover the cost of the demolition on and the removal from the surface of the site of all items established in terms of 8.3.2 and 8.3.3, and shall provide good and the restoring of the site to the satisfaction of the Engineer

PSA 8.3.5 Fixed Charge Health and Safety Obligations

Add new payment Item as follows:

Fixed Charge Health and Safety Obligations……...Unit: Sum

The sum shall cover the fixed cost associated with the Contractor's Health and Safety Obligations.

PSA 8.3.6 / PS EM Fixed Charge Environmental Management Obligations

Add new payment Item as follows:

Fixed Charge Environmental Management Obligations……Unit: Sum

The sum shall cover the fixed cost associated with the Contractors Environmental Management Obligations.

PSA 8.3.7 As- Built Requirements

Add new payment Item as follows:

Fixed Charge Environmental Management Obligations……Unit: Sum

The sum shall cover the fixed cost associated with the Contractors Environmental Management Obligations.

PSA 8.4.6 / PS H&S Time Related Charge Health and Safety Obligations

Add new payment Item as follows:

Time Related Charge Health and Safety Obligations……Unit: Sum

The sum shall cover the time related costs associated with the Contractors Health and Safety Obligations.

PSA 8.4.7 Time Related Charge Environmental Management Obligations

Add new payment Item as follows:

Time Related Charge Environmental Management Obligations……...Unit: Sum

The sum shall cover the time related costs associated with the Contractors Environmental Management Obligations.

PSA 8.5 Provisional Sums

PSA 8.5.1 Labour Desk/Community Liaison Officer (CLO)……Unit: Provisional Sum

The provisional sum is to cover the cost of the CLO's monthly salary for the duration of the contract.

PSA 8.5.2 Overheads, charges and profit on the above provisional sum……Unit: %

The percentage tendered shall cover the office administration of the CLO's employment contract as well as on site management of the CLO, for the duration of the contract and all overheads, charges and profit.

PSA 8.5.3 Reimbursement of Project Steering Committee Members for attendance of meetings……Unit: Provisional Sum

The provisional sum is to cover the cost for reimbursements to Project Steering Committee Members for attendance of meetings for the duration of the contract.

PSA 8.5.4 Overheads, charges and profit on the above provisional sum……Unit: %

The percentage tendered shall cover the cost of on site management of and liaison with Project Steering Committee Members, for the duration of the contract and all overheads, charges and profit.

PSA 8.5.5 Additional survey……Unit: Provisional Sum

The provisional sum is to cover the cost for setting out pipeline, checking controls, benchmarks and as built survey.

PSA 8.5.6 Overheads, charges and profit on the above provisional sum……Unit: %

The percentage tendered shall cover the cost of management of and liaison with the surveyor
The following provisional sums have been allowed:

- Accommodation of the Engineer & assistant for the duration of the contract
- Transportation for the Engineer and assistant during construction
- Electronical Equipment for the Engineer
- Dayworks

PSA 8.5.10 Accommodation for the Engineer

The provisional sum is to cover the cost of the Employers Agent accommodation monthly for the duration of the contract.

PSA 8.5.11 Overheads, charges and profit on the above provisional sum……Unit: %

PSA 8.5.12 Transportation for the Employers Agent and assistant

The provisional sum is to cover the cost of the Employers Agent transport on monthly basis for the duration of the contract.

PSA 8.5.13 Overheads, charges and profit the above provisional sum……Unit: %

PSA 8.5.14 Telephone for Employers Agent

The provisional sum is to cover airtime for the Employers Agent monthly for the duration of the contract.

PSA 8.5.15 Overheads, charges and profit on the above provisional sum Unit: %

PSA 8.5.16 Data for Employers Agent

The provisional sum is to cover data for the Employers Agent monthly for the duration of the contract.

PSA 8.5.16 Overheads, charges and profit on the above provisional sum Unit: %

PSA 8.5.18 Local Civil Engineering Student Allowance

The provisional sum is to cover the cost of the Local Civil Engineering Student receiving the experiential training from the Contractor, this is monthly salary for the duration of the contract.

PSA 8.5.19 Overheads, charges and profit the above provisional sum……Unit: %

PSA 8.7 Dayworks

The unit rates for labor and plant, or percentage allowances for addition to the net cost of labor and materials shall cover overhead charges and profit, site supervision and site staff, insurances, holidays with pay, and use and maintenance of tools and equipment

The rates for plant hire shall cover cost of plant operators, consumable stores, fuel and maintenance. The rates or allowances shall also cover travelling allowances or travelling costs (transport of men by Contractor's transport or transport hired or paid for by the Contractor), lodging allowances and any other emoluments and allowances payable to the workmen.

PSA 8.8 Temporary Works

PSA 8.8.2 Accommodation of Traffic
A specific item has been included in the Schedule of Quantities to allow the Contractor to cover the costs of accommodating traffic through the works and on adjacent roads.

The sum shall cover the supply, erection and moving and re-erection of all necessary traffic signs, delineators, barricades, the effect on the Contractor's programme, delay in the works, damage to or loss of any signage, the provision of flagmen and any other operation or equipment, plant or labour necessary.

The layout of the sign sequence shall be as per the South African Road Traffic Signs Manual (1999).

Payment under this item will be made on a pro-rata basis for the duration of the contract.

PSA 8.8.4 (c) Existing Services

The tendered rate shall further cover the cost of backfilling the excavation with selected material compacted to 90% Mod AASHTO density, keeping the excavation safe, installation of markers, liaising with the relevant authorities and taking care that the services are not damaged in any way. No direct payment will be made for the protection of such services.

The Contractor shall timeously locate and report the exact positions and level of the services listed below. This is to be done under the supervision of the relevant authorities prior to excavations or construction in the immediate vicinity of the services.

1. Electricity supply cables
2. Eskom Overheads
3. Water pipes
4. Telkom cables
5. Sewer pipes

The approximate positions at which the services are to be located are shown on the drawings. The positions of the services (both underground and overhead) shall be clearly marked for the duration of the construction.

The coordinated position of each service found, together with the level of the top of the service and appropriate dimensions (e.g. diameter or circumference) shall be communicated to the Engineer as soon as possible.

PSA 8.9 MISCELLANEOUS ITEMS

PSA 8.9.1 Engineering surveyor as directed by Employer's Agent

The provisional amount will be deemed to cover the costs for an engineering surveyor for the works when required or as directed by the Employer's Agent. The surveying of the works is to be used for checking of design purposes or for proposed design alternatives.

PSA 8.9.2 Specialised testing as directed by Employer's Agent

The provisional amount will be deemed to cover the costs for the specialized of testing of the works, either materials or the completed works themselves when required or as directed by the Employer's Agent.

SANS/SANS 1200AB – ENGINEER'S OFFICE

PSAB 3.2 Engineer's Office

The Contractor shall supply, maintain and service one office for the sole use of the Engineer's Representative. In addition to the furniture, the following item is required in the office:

a) One plan rack
b) Shelving of total length 3m of nominal width 300m
c) Trestle table 2m long x 1m wide x o.9m high x 0.9m and lockable at least 1 drawer
d) Acceptable lighting
e) Acceptable blind on each window
f) Provisional heating in winter and cooling in summer

PSAB 4.1 Telephone & Data

a) No telephone is required; however, the Contractor shall supply airtime for a Cellular telephone for the sole use of the Engineer's Representative. The Contractor shall be responsible for the cost of the calls, which should not exceed R1500,00 per month on average.

b) Contractor shall supply data for internet use of the Employers Agent and his assistant which should not exceed R 2000 per month on average.

PSAB 5.5 Survey Assistants

Refer to Clauses 2.4 and 2.5 of Part A of these Project Specifications.

PSAB 5.5 Survey Equipment

Refer to Clause 2.4 of Part A of these Project specifications

SANS / SANS 1200 C – SITE CLEARANCE

PSC 2.3 Définitions

Add the following paragraph:

Clearing shall consist of removing vegetation that significantly interferes with the work to be carried out. Generally, grass will not require clearing.

PSC 2.3.1 Conservation of topsoil

Add the following

The Contractor will be required to conserve top soil during clearing of the site for reinstatement after construction.

PSC 3.1 Disposal of Material

All rubble and refuse shall be disposed of at registered landfills.

Excavated material disposed at borrow pits shall be rehabilitated in accordance with the environmental specification.

PSC 5.1 Removal and Reinstatement of Fences

Add the following paragraphs:

Fences that are removed for construction purposes are to be temporarily reinstated when no work is in progress in the immediate vicinity and they are to be fully reinstated on completion of construction in the affected area.

Where construction is to be undertaken close to existing private fences, the Contractor shall take due care to avoid damage to fences, and shall return the ground level to that which existed before construction. Any damage to the fences shall be repaired at the Contractor's cost. Contractor must ensure that livestock does not enter the road reserve at any time while removing and reinstating existing fences.

PSC 8 Measurement and Payment

PSC 8.1 Remove Topsoil to nominal depth of 150mm and stockpile ……Unit m^3

The extent of the areas where topsoil is to be removed will be decided in consultation with the Engineer on site.

SANS / SANS 1200 D – EARTHWORKS

PSD 5.1.6 Road Traffic Control

Add the following paragraphs:
Where a trench crosses an existing road, half width construction is to be used. The trench crossing is to be adequately barricaded. The layout of the sign sequence shall be as per the South African Road Traffic Signs Manual (1999) Section 13.9.3. No trenches across roads shall be left open overnight. The Department of Public Works way-leaves notification requirements are to be complied with.

PSD 5.2.1.2 Conservation of Topsoil

Add the following:
"Topsoil is to be stockpiled in an area or areas to be approved by the Engineer. The area occupied by the stockpile shall be so shaped and tidied after removal of the stockpile that erosion by wind and weather is minimized. If required by the Engineer this area shall be grassed."

PSD5.2.5.1 Free haul

In the second sentence after the words "selected by the Contractor" add "as well as from designated borrow pits".
After the last sentence add the following:
"In addition, all movement of material within the site shall be regarded as free haul."

PSD6 Benching (Clause 5.2.2.5)

The requirements of Subclause 5.2.4.1 (b) of SANS 1200 DM shall apply."

PSD8.3.14 Chambers (Clause 8.3.14)

All clearing and grubbing, excavation, backfill, disposal of material and associated works required for chambers are deemed to be included in the rate for the chamber.

PSD 8.3.3 Restricted Excavation

Payment for this excavation will be by the cubic metre, and the rate tendered shall include all operations to remove the material and trim the ground to the required lines and levels.

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.3.8.1 Existing Services…… Unit: m³

Add the following to (c):

"The rate prices for (c) above shall include the use of specialised detection equipment required to search for a particular type of service."

The rate tendered for (c) shall further cover the cost of backfilling the excavation with excavated material compacted to 90% Modified AASHTO density, loading, transporting within a free haul distance of 0,5 km and disposing surplus material as directed, keeping the excavation safe, dealing with water, taking special care that the exposed services are not damaged in any way and any other operation necessary to complete the work.

The rate for hand excavation in roadways shall include compensation for compacting excavated or selected backfill material to 93%, subbase quality material to 95% and base coarse material to 100% of modified AASHTO density, as the case may be.

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 within the free-haul distance, and for supplying adequate supervision during both excavation and backfilling operations. The Contractor shall take the necessary steps to actively separate the pavement layers for later reuse.

No distinction will be made to the depths or the lengths to which excavations are taken.

Excavation in excess of that authorised will not be measured for payment."

PSD 8.3.11 Grassing……..Unit: m²

Add the following:

"The rate tendered shall cover the cost of supplying "instant lawn" type grassing, irrigation of the area plant and shall cover all costs for temporary irrigation systems required to irrigate grassed embankments as specified. Payment shall be made on the basis of 50% payment on completion of the grassing operation and 50% on expiry of the maintenance.

The rate shall further cover the cost to supply and place a topsoil "top dressing" layer over the planted sods and for rolling the lawn with a steel drum roller not bigger than a Bomag 65."

SANS / SANS 1200 DB – EARTHWORKS (PIPE TRENCHES)

PSDB 3.1 Classes of Excavation for Labour Intensive Excavation

Where labour intensive excavation is specified soft excavation will be held to be any material which in the opinion of the Engineer can be excavated by pick, gwala or shovel.

Payment shall be in accordance with SANS1200 DB Clause 8.3.2.

Boulders greater than 0,02m^3 removed from pipe trenches will be paid per cubic meter removed. The boulders shall either be excavated whole or blasted, drilled and split and then removed to an approved tip site and replacement of unsuitable material.

PSDB 3 MATERIALS

PSDB 3.5 Backfill Materials

Add the following to Clause 3.5(b):
"Materials used in the reinstatement of trenches beneath a roadway, up to underside of the road layers, shall comply with Clause 3.6.1. The length shall be taken as the nett road width plus 1.0m beyond the edge of surfacing or back of kerb as applicable

PSDB 3.6 Materials for Reinstatement of Existing Roads and Paved Areas

PSDB 3.6.1 Subbase and Base:

Delete the contents of 3.6.1 and replace with the following:

Where trenches cross existing surfaced roads the following will apply:

(a) The service (pipe, cable etc.) shall be laid on a bedding cradle, and covered with a fill blanket, as specified in section LB (Bedding - Pipes) SANS 1200 or in the Project Specification.

(b) The remaining portion of the trench, from the top of the fill blanket to the road surface, shall be filled with cellular trench backfill material.

(c) The specification for this material is as follows:-

(i)	Definition	:	Material shall consist of a cellular light-weight concrete incorporating large volumes of controlled micro-air cement and sand.
(ii)	Density Range	:	150 - 1400 kg/m^3 and have an equivalent CBR value greater than 100.
(iii)	Consistency	:	Material shall be of a pickable nature after final setting.
(iv)	Admixture	:	The admixture is a pre-foam organic compound accelerated by the addition of calcium chloride. Chloride free additive must be used where the outer casing of the service being covered is metallic.
(v)	Setting Times	:	The finished product must achieve initial set within 90 minutes. It must then be able to carry light traffic.
(vi)	Specifications	:	British Standards draft S.W.P. 146 of July 1990.

PSDB 3.6.4 Bituminous and Premix Surfacing

Delete the contents of Clause 3.6.4 and replace with the following:

A hot premix (type IV a or 7mm sidewalk mix) laid on a cleaned surface which has been previously tack coated with an anionic emulsion shall be used in the reinstatement of the road surface."

PSDB 3.7 Selection of Materials

Notwithstanding the requirements of sub-clause 3.7 of SANS 1200DB and sub-clause 3.3.1 of SANS 1200LB regarding the use of selective methods of excavation, the Contractor shall use selective methods of excavation to avoid burying or contaminating material that is suitable and is required for bedding or top soiling. The top 150 mm of topsoil shall be kept separate for top soiling of the trench during reinstatement. No additional payment will be made for complying with this requirement.

PSDB 4.3 and PSDB 5.2 Minimum Cover (Sewer Interceptors)

The structural strength of a pipeline is dependent on, among other things, the bedding, the trench width and cover. The Contractor shall plan his work such that pipelines are only laid after earthworks are completed to the extent that the minimum cover to the pipe will be 600 mm unless under roadways where the minimum cover shall be 1 000 mm before any heavy equipment crosses the pipeline. Cover to the pipelines will be 900 mm across ploughed lands and in road reserves.

PSDB 5.2 Trench Widths

Add the following:

See the appropriate drawing for labour intensive excavation trench widths and multiple pipe trench widths. Payment will be in accordance with Clause 8.3.2.

PSDB 5.3 Site Clearance

Site clearance will only be done on instruction of the Engineer.

PSDB 5.4 Over break In Trenches

The Contractor shall make good at his expense any additional excavation required by the shattering and removal of hard materials in excess of the following allowances:

a) Over break in the trench width: nil
b) Over break in the trench bottom: 250mm below pipe invert level

PSDB 5.6.1 Backfilling

Add the following:

Topsoil removed (refer to clause PSDB 3.7) shall be replaced and tramped into place. No additional payment shall be made for this activity.

PSDB 5.6.3 Disposal of Soft Excavation Material

Delete the contents of Clause 5.6.3 and replace with the following:

No surplus material shall be disposed of alongside the trenches but within the specified dump sites

"Excess material arising from the excavations will be disposed of at a designated tip site. The rate for spoiling of excess material shall include for the loading and carting of material, and the off-loading

at the tip site. The Contractor shall be responsible for all charges levied at the tip site. The current charges applicable may be obtained from the Municipality's Cleansing Division.

Where topsoil is encountered this will be set aside on site and re-used later."

PSDB 5.6.6 Completion of Backfilling

Add the following:

If in the opinion of the Engineer's Representative the Contractor is lagging in the backfilling of trenches, he will be entitled to order that no further excavation takes place until the backfilling operation has caught up.

PSDB 5.9.7 Procedure for Backfilling with Trenchfill
(New Clause)

(a) The cellular backfill material (hereinafter called "trenchfill") is ordered from the supplier, and is delivered to site in a truck-mixer. The material is poured directly into the trench, and no vibrating or additional compaction is necessary.

(b) The trenchfill shall be cast flush with the surrounding road surface, and trowelled to an even surface.

(c) After the trenchfill has set, either the same day or the following day, the top 40mm of the trenchfill must be scabbled off using a pick, or paving breaker and the depression reinstated using hot asphalt. After compaction, the asphalt must be finished flush with the surrounding road surface.

(d) The asphalt reinstatement of the trench will be carried out by the Municipality or, in the case where the works are being performed by a Contractor, the contractor may carry out the reinstatement.

PSDB 5.9.8 Safety
(New Clause)

(a) During the time period between pouring the trenchfill into the trench, and the setting of this material, it is imperative that no person or animal be allowed to gain access to the trench. Suitable barricades shall be provided around the trench and a guard placed on duty at the trench until the material sets.

Should the trenchfill not be set by nightfall, safety lamps shall be placed on the barricades.

(b) The responsibility for public safety lies with the organisation carrying out the excavation and backfill operations.

PSDB 8 Permanent Anti-Erosion Berms
Add:

Anti-erosion berms shall be constructed as per Engineers details. Payment shall be by number of Anti-erosion berms, and the rate tendered is to include for the provision of all material for construction.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.3.2(a) Excavation
Delete the contents of 8.3.2(b)(1). For the purpose of measurement and payment, material other than hard rock will not separately classified.

PSDB 8.3.2(d) <u>Extra Over 8.3.2(a) for Hand Excavation where ordered</u> ……..Unit: m^3

The rate tendered shall cover the additional cost, extra over than provided for under 8.3.2(a), for carrying out trench excavation by hand where ordered by the Engineer.
The volume shall be computed from the dimensions specified, shown on the drawings or ordered by the Engineer.
Normal handwork required to clean and trim the sides and bottoms of mechanically excavated trenches will not qualify for payment in terms of this clause."

PSDB 8.3.3.1 Deficiency in Backfill Material

Add the following to 8.3.3.1(c):
The rate shall also include for compaction of base course quality backfill as per PSDB 3.5"

PSDB 8.3.4 Particular Items

Replace the heading of (a) with the following:
(a) Shore trench where ordered by the Engineer."

PSDB 8.3.7 Payment for Accommodation of Traffic

Add:
Payment shall be a sum amount and the rate tendered is to include for the provision of barricading and all signage, flagmen, etc., as outlined in SANS 1200 DB 8.3.7 together with the requirements of PSD5.1. 6..

PSDB 8.3.6.1 Reinstate Road surfaces complete with all courses
(a) Extra-over for backfilling trenches using Trenchfill..... Unit: m^3

(b) Hot asphalt type IV with slurry seal over (min thickness 35mm) .....Unit: m^2

For item (a) the volume will be computed from the length of trench as applicable, and the width determined from the applicable side allowances specified in 8.2.3 and the depth from road surface to top of selected fill blanket. Payment for this item will be additional to that for excavation covered by 8.3.2.

For item (b) the area will be computed from the length of paved trench surface as applicable and the width determined from the applicable side allowances specified in 8.2.3. The final compacted thickness of the asphalt layer must be not less than 25mm or as specified.

The rate shall cover the cost of temporary accommodation of traffic (including the signs and by-passes), arranging for safety of the public, excavation (including breaking up, removal and disposal of surplus material) and the subsequent reinstatement as specified in 5.9, and shall include the cost of delays and the cost of any risk of having to repair damage as specified in 5.10.

SANS 1200 DK GABIONS AND PITCHING

PSDK 3 MATERIALS

PSDK 3.1 Gabions

PSDK 3.1.1.2 **Size**

Delete the contents of 3.1.1.2 and replace with the following:

"Stone size shall be as scheduled in the Bill of Quantities."

PSDK 3.1.2 Gabion Cages

Delete the last sentence of 3.1.2 and replace with the following:
"Gabion baskets shall be made of diagonal woven wire mesh ("double twist") and be zinc coated Class A as per SANS 675 – 1997 with a 0,5 mm nominal thick PVC coating extruded over the wire."
PSDK 5.1.2 Lacing of Cages

Add the following to 5.1.2:
In place of lacing wire, lacing may be done by means of "Spenax" tool with 3 mm diameter stainless steel rings of tensile strength 156 to 178 kg/mm² with spacing not exceeding 100 mm."

SABS 1200 G: CONCRETE (STRUCTURAL)

PSG 1 MATERIALS

PSG 1.1 Applicable Specifications (3.2.1)

Add the following:
All cement types shall comply with the requirements of SABS ENV 197-1
For this contract only OPC CEM I, Class 42.5, cement shall be used.

PSG 1.2 CEMENT (3.2.1 and 3.2.2)

The grade of concrete shall be as specified on the drawings or schedule of quantities. Cement shall not be kept in storage for longer than four weeks and shall be used in the order in which it has been stored.

PSG 2 PLANT

PSG 2.1 Ties (4.5.3)

Add the following:
Permanent metal ties shall have a minimum concrete cover of 40mm after formwork has been removed.

Tie holes shall be filled with "Durabed "grout supplied by ABE or similar approved. The product shall be prepared to a non-slump consistency, but where no cracking occurs when pressed into a firm ball. Trial mixes shall be made to arrive at the required working consistency.

PSG 3 CONSTRUCTION

PSG 3.1 Fixing (5.1.2)

The welding and the use of heat in cutting high tensile deformed bars (Y bars) shall not be permitted without the approval of the Engineer.

PSG 3.2 Cover (5.1.3)

The reinforcement shall be fixed with the minimum cover as specified on the drawings.
In the case of walls, columns, roof slabs, the minimum specified cover should be attained by one of the following methods, or as approved by the Engineer.

- by using "cover block" manufactured from dense, strong cement/sand formed in a block

with wire ties, cured under water for a minimum period of 7 days.
- by the use of plastic spacers, set in an orientation so that no pockets pf air can be trapped beneath them during vibration of the concrete.

PSG 4 FORMWORK

PSG 4.1 Design of Forms

(i) Forms shall conform accurately to the shape, lines, levels and dimensions of the concrete as shown on the drawings.
(ii) The design of formwork and supports shall be the responsibility of the Contractor.
(iii) Forms shall be designed as to support their mass, the load exerted by wet concrete and the vibration, construction or other loads that they may be subjected.
(iv) All timber shall be free from holes, loose knots, cracks, splits, warps or other defects likely to affect the strength or appearance of the finished structures.
(v) Wedges and clamps shall be used in preference to nails for securing the form components and wire ties or tie bolts in reinforced concrete, and must be capable of removal after use, except as otherwise specified.

PSG 4.2 Classification of Finishes (5.2.1)

Notwithstanding Sub-clause 5.2.1, finishes shall be classified as rough or smooth, as follows:

(a) Rough
Concealed surfaces and surfaces more than 200mm below final ground level

(b)Smooth
All surfaces not classified as "rough" in paragraph (a) shall be classified as "smooth". All exposed areas, unless other indicated, shall be chamfered 20mm x 20mm by means of a fillet fixed to the formwork.

PSG 4.3 Removal of Formwork (5.2.5)

Add the following:
Removal of forms shall be determined by means of cubes cast with the concrete and cured in accordance with S.A.B.S. 863. The removal shall be carried out under the personal supervision of the Foreman, only after the permission of the Engineer has been obtained and in such a manner that the concrete is not jarred, vibrated or otherwise damaged. Where test cubes to determine stripping times are not made, the minimum periods which shall elapse between the time of the placing of the concrete and the time of removal of the forms, shall otherwise agreed with the Engineer, be in accordance with the table hereunder, where each day covers a full 24 hour period.

Delete Table 2 and replace with the following:

Minimum stripping Times in Days

	CEM I	CEM I	CEM II	CEM II	CEM III	CEM III
Type of structural Member of Formwork	Normal Weather (Above 15° C)*	Cold weather (Below 5°C)*	Normal Weather (Above 15° C)*	Cold weather (Below 5°C)*	Normal Weather (Above 15° C)*	Cold weather (Below 5°C)*
Beam sides, wall or unloaded	1	2	2	4	2	6

cols						
Slabs, with props left underneath	4	7	5	8	6	10
Beam soffits. Props left underneath	7	12	8	14	10	17
Removal of Slab Props	10	17	10	17	12	21
Removal of beam Props	14	21	14	21	18	28

*Average daily temperature of the atmosphere adjacent to the concrete as measured by a maximum and minimum thermometer.

PSG 5 CONCRETE (Water Class Concrete)

PSG 5.1 General (5.5.1.1)

Concrete shall comply with the requirements for strength concrete. (See clause 5.5.1.7)

The maximum cement contact for all grades of concrete shall not exceed 450kg per m^3 without the permission of the Engineer. In addition, the following will be applicable for this project:

1. The concrete must be resistant to mild acid with a PH of approximately 6.
2. This may be facilitated by slowing the progress of the reaction by using a calcareous aggregate (e.g. limestone) which is susceptible to acid attack and will help to neutralize the acid.
3. Coarse aggregate used must be as large as possible i.e. 26.5 mm to reduce the proportion of paste in the concrete which is vulnerable to acid attack.
4. Fine aggregate must be well graded and able to produce a dense, impermeable matrix that will resist the ingress of aggressive materials. The grading curve given in Fulton's concrete technology and referred to as the preferred grading must be used and not the grading given in SANS 1083.
5. A high proportion of cement i.e. a minimum of 350 kg/m3 must be used to ensure a sufficient content of Ca(OH)2 which is vulnerable to acid attack. This minimum cement content must be used irrespective of the water/cement ratio requirement for a 30 MPa concrete.
6. The concrete must be resistant to attack by sulphates which are present in sewage.
7. A cement must be used which is resistant to expansive reactions due to sulphates. The best cement available for this purpose will be a 50/50 blend of ground granulated blast furnace slag and clinker cement.

Curing of concrete

Curing of concrete by means of surface water retention or use of an acceptable curing compound must be included to improve the impermeably of the concrete surface to chemical ingress.

Permeability and resistance to chemical attack can be enhanced by using the various

proprietary materials available for the purpose which can be used as a coating, either barrier or penetrating. Information must be obtained from the manufacturer/supplier and included in your submission.

PSG 5.2 Sample and Trial Concrete mixes

The concrete mixes for the grade of strength shall be designed by an approved design laboratory. The Contractor at his own cost shall supply to the laboratory samples of the cement and aggregate he proposes to use for the works. The proposed slumps and proportions of the materials to be used for each grade of concrete shall be submitted to the Engineer for his approval.

No structural concrete shall be placed on the job until the Contractor has satisfied the Engineer as to the suitability of the mixes concerned.

Trial panels for durability concrete (W class concrete)

As part of the durability class concrete mix design approval process, trial panels shall be constructed on the site (or at the laboratory) before construction of structural elements commences, to ensure that the contractor can successfully achieve the oxygen permeability and sorptivity targets set for the in-situ concrete with method of construction to be adopted. Each trial panel shall be constructed using the same type of concrete mix, shuttering type, placing and curing methods (including application rates of curing compounds if applicable) as to be used on the final structural element to be constructed. The dimensions of such a trial panel shall be 0.40m wide, 0.60m high and 150mm thick. The panel shall be constructed vertically. It is suggested that 2 lifting hooks be cast into the panel to facilitate lifting, moving or disposal of panel. It most likely will be that one trial panel will be required for substructures (piers, columns, retaining walls, etc) if the same grade concrete is specified for all substructures.

The test area for taking of cores (taken in horizontal direction) shall not be less than 100mm from all horizontal and vertical edges. The number of cores to be extracted and tested is described below.

Test panels for durability concrete (W class concrete)

During casting of concrete on site, test panels shall be constructed on the site adjacent to where the concrete element is being placed. Each test panel shall be constructed with the same concrete, shutter type, compaction and curing methods being used in the element being cast (including same vibrator frequency and curing compound application rates), and be left to cure for 28 days adjacent to the concrete element. Thereafter it shall either be cored on site or transported to the laboratory for testing of the required durability parameters. The dimensions of the test panels shall be 0,4m wide, 0,6m high and 150mm thick and be cast vertically to simulate vertical casts of the substructures and vertical faces of all structures. It is suggested that 2 lifting hooks be installed at both top ends of the test panel to assist with transport. For precast concrete, test panels will not be constructed, as cores will be drilled from the concrete elements at the Precast yard before being placed at its final location. For the horizontal faces of Columns/Surface Bed Slabs, Water Retaining Walls and All bases/foundations, test panels will also not be constructed. Instead, cores will be extracted from the top surface of the test panels.

The frequency of the testing and number of cores to be extracted is described under below.

The test area for the taking of cores (taken in a horizontal direction) shall not be less than 100mm all horizontal and vertical edges.

Testing for concrete durability

Durability predictions for durability concrete prefixed 'W' will be based on the following tests that shall be carried out by an accredited laboratory approved by the Engineer:

(i) Oxygen permeability
(ii) Water sorptivity
(iii) Chloride conductivity

Notes:
The test methods shall be as described below.

For test no's (i) and (ii) (and (iii) when required), cores of 70 ± 2mm diameter shall be extracted from the test panels when the concrete reaches the age of at least 28 days and tested.

Test No. (iii) may only be required where specified (e.g., within a chloride environment along the coast or where chlorides are present in ground water).

NUMBER OF CORE RESULTS REQUIRED FOR A SINGLE SAMPLE FOR DURABILITY TESTING

Durability Parameter	**No. of Core Results**
a. Sorptivity	1
b. Oxygen Permeability	2
c. Chloride conductivity	1

* Test undertaken only if specified and within a chloride environment.

NUMBER OF TEST PANELS REQUIRED FOR DURABILITY TESTING

Element	**No. of Test Panels to be taken**
Water Retaining walls	1 (per element/pour)[2]
All bases/foundations	1 (per element/pour)[2]
Columns/Surface Bed Slabs	1 (per element/pour)[2]

Note:

1. Test panels required to be cast vertically. Additional cores required to be extracted from roof slabs/beams, i.e. in-situ cores.
2. Note that where group of elements are cast on the same day, only one test panel will be required, but only if the same grade concrete is used.

For cores to be extracted from precast elements, the engineer will indicate the positions at which the cores will be extracted. Filling of the holes left by the drilling of the cores shall be the responsibility of the contractor and shall be carried out using an approved proprietary non-shrink repair mortar so as to restore structural integrity and durability of the structural element tested.

The methodology and latest revisions for the durability index tests are available at the University of Cape Town's web address at www.civil.uct.ac.za.

Testing for concrete cover

Concrete cover testing shall be conducted using an approved calibrated electromagnetic cover meter, able to comply to requirements as defined in linear and block scans and has the ability to save and calculate data measured.

The testing (non-destructive) shall be conducted to confirm that the specified depth of concrete cover has been achieved. The cover meter tests shall cover at least $1m^2$ for every $20m^2$ surface area of concrete placed. Readings shall be taken to identify individual bars, with at least 3 readings at 100mm spacing on every single bar within $1m^2$. The cover meter must be calibrated whenever being used to test for cover on each project. Standard Calibration block must be used on each project, and where substantial testing is required, the calibration block shall be kept on site. Cover meters shall comply with the relevant modern standards (e.g. EN55011, 50082-1, 6100-6-1, 6100-6-2, 6100-6-3, 6100-6-4 and BS18881 Part 204).

Critical elements for cover surveys are Columns/Surface Bed Slabs, Water Retaining Walls and All bases/foundations. The engineer will identify other critical areas required to be surveyed. Should any of these areas shows deficiencies, the engineer may order additional cover tests on other areas at the contractor's costs.

The procedure for testing for depth of reinforcement from concrete surface shall be in accordance with the manufacturer's requirements for the relevant electromagnetic cover meter. All cover meters shall be calibrated on site under the control of the engineer. The number of readings taken of the layer of rebar closest to the concrete surface to each $1m^2$ to be tested shall be such that an accurate average cover can be determined for the tested area. For the purposes of calculating the average depth of cover bars that have covers 15mm or greater than what is specified shall be capped at specified cover plus 15mm in the calculations.

Example, where Specified cover = 40mm, test as 35mm, then apply limits, 85% * 35 = 30mm.

Quick Scan readings are to be taken perpendicular to the layer of rebar closest to the concrete surface for each scan area (+/- 30 per m^2), so that an *average cover* to reinforcement can be determined for the tested area.

Readings are to be taken to identify individual bars within each $1m^2$. At least three cover readings, at 150mm spacing, per an individual bar shall be shown in the test results but only overall cover measurement would be used for payment purposes. Reports generated by the equipment shall be used for determining payment. Where more than 10% of readings are below specified lower limit, the area shall be re-scanned, by *Image, Block or Grid scan* method, to verify the average cover.

Cognizance to be taken of the effect to cover depth measured, where spliced bars are measured in same area as single bars. The size of rebar shall be corrected manually on the device by means of applying the following formula (approximately 1.41 x diameter of rebar as shown in design).

Where insufficient cover are established before placing of concrete, e.g. Starter bars from base not correct position, remedial action to be performed before continuing with next concreting – these actions to be clearly recorded and area identified.

SANS 1200 GA: CONCRETE (SMALL WORKS)

PSGA 1 SCOPE (Clause 1.1)

This section includes specifications for various aspects of concrete referred to in other sections of the standard specifications.

PSGA 2 CEMENT (3.2.1 and 3.2.2)

The grade of concrete shall be as specified on the drawings or schedule of quantities. Cement shall not be kept in storage for longer than four weeks and shall be used in the order in which it has been stored.

SABS 1200 GB: CONCRETE (ORDINARY BUILDINGS)

PSGB 1 SCOPE (Clause 1.1)

This section includes specifications for various aspects of concrete referred to in other sections of the standard specifications as well as the construction of cement screeds and waterproofing of concrete roof slabs.

PSGB 2 GENERAL

PSGB 2.1WATERPROOFING

Waterproofing materials shall be transported, handled and stored with care and laid strictly in accordance with the manufacturer's instruction. A clean, dry, smooth, firm and structurally adequate base with a fall of at least 1 in 50 (depending on the material selected) is required with drainage to gutters and/or rainwater outlets on roof edges, as relevant. Attention shall be given to the detailed design of openings, projections, gutters, down pipes and finishes to make adequate provision for run-off water and to minimise blockages.
Corners and edges shall be covered or angle-rounded. Run-off over the edges of slabs shall be eliminated as this causes stains to the building. Fillets of 75 x 75 mm shall be provided at upstand corners.
The necessary gradient for waterproof membranes are normally provided on top of structures in low-density screeds and then finished, if necessary, with a cement/mortar topping.

PSGB 2.2CEMENT SCREEDS

CEMENT

The grade of concrete shall be as specified on the drawings or schedule of quantities. Cement shall not be kept in storage for longer than four weeks and shall be used in the order in which it has been stored.

Mechanised plant e.g. scabblers or abrasive blasters must be used for complete removal of all laitance from the existing surface of the floor slab. Dust pollution should be kept to a minimum during these operations. Once the coarse aggregate of the slab is exposed, all dust and debris should be removed, surface thoroughly wetted and maintained for approximately 12 hours. A bond coat (1:1 mix of cement and fine sand) should be spread evenly over the surface using a stiff fibre brush. The screed must be laid and compacted in 1 layer.
Screeds and toppings shall be of sufficient quality to provide a firm base. The following screed characteristics are suggested for waterproofing purposes:

(a) Compressive strength of at least 25Mpa at 28 days;

(b) Steel-trowel finish (light);

(c) Drying shrinkage of less than 0.2% when tested in accordance with the testing conditions specified in SABS 836;

(d) Minimum screed thickness of 40mm;

(e) Maximum moisture content of screeds:

(i) Applications with a density of less than 500 kg/m^3: 10%

(ii) Applications with a density exceeding 500 kg/ $m^{3:}$ 7%

The screed should be cast or sawn into panels that do not exceed 9m^2 to cater for drying shrinkage and to control cracking.

PSGB 3 MEASUREMENT AND PAYMENT

PSGB 3.1Cement Screeds for:

(a) 25mm screed on floors
unit: m^2
(b) 25mm screed on roof slabs unit: m^2

The unit of measurement shall be the square metre of exposed surfaces to be screed.

The tendered rate shall include all costs for supplying, delivering, storing on site, handling, etc of the materials necessary for the screed, including mixing and laying of screeds currents and falls and forming of sundry items such as fillets, etc complete. The tendered rate shall also cover the cost for forming of screeds around outlets, waste and of all scaffolding, temporary supports, hoisting facilities, etc.

PSGB 3.2Waterproofing of roof slabs with Derbigum or similar approved unit: m^2

The unit of measurement shall be the square metre of the horizontal and vertical surfaces of waterproofing to the approval of the Engineers. All turn-ups and turn-downs will be deemed to be included in the area measured for the waterproofing and will not be paid for separately.

The tendered rate shall include all costs for supplying, delivering, storing on site, handling, moving, installing and fixing the waterproofing system complete with all necessary sundry items, such as flashing strips, dressing waterproofing around pipes and into outlets and channels. The tendered rate shall also cover the cost of cutting and waste and for scaffolding, hoisting facilities, etc.

SANS / SANS 1200 L – MEDIUM PRESSURE PIPELINES

PSL 3.1 General

Add the following:
All pipes, specials and valves arriving on site shall be marked clearly with the item code appearing in the Schedule of Quantities. Furthermore, the nuts, bolts, washers and other ancillary equipment for each individual item shall be kept separate in a bag which shall also bear the respective reference number of that item. The cost of such marking will be held to have been included in the rates tendered for the items.

The Contractor shall provide adequate storage facilities for pipes, couplings and fittings to conform with the following:

a) Stacking of pipes
Pipes may be strung out in the servitude. When stacking is necessary the Contractor shall make the necessary arrangements for stacking areas and shall stack as recommended by the manufacturer.

b) Coupling and fittings
Until required for use the rubber rings shall be stored in a cool, dark place, away from grease, oil or harmful chemicals. If rubber rings have been tied they shall be separated a few days before required for use in order to eliminate minor impressions, which the ties may have caused.

Couplings, into which rubber rings have been fitted, ready for use, shall be stored under cover and the entire flange wrapped with mastic impregnated bandage over wrapped with plastic, all carried out according to the manufacturer's recommendations.
All buried steel pipes shall be wrapped in a mastic-impregnated bandage over wrapped with plastic.

PSL 3.7 Other Types of Pipes

Add the following sub-clauses:

PSL3.7.1 uPVC PIPES (Clause 3.7.1)

uPVC pipes shall comply with the requirements of ISO 9002 – 1987 and SANS 966 : 1998.

PSL 4.1 Handling

The Contractor shall satisfy the Engineer that the manufacturers' recommendations for good practice for transporting, handling, stacking, storing and installing pipes, pipe fittings, sealing rubbers etc are being diligently followed. The Engineer's Representative shall be given the opportunity to inspect all materials immediately prior to installation and shall have the right to reject any materials which, in his opinion, have suffered damage which may impair the long-term durability or strength of said items.

PSL 5.1.4 Depths and cover

Sewer Interceptor shall be laid so that the minimum cover to the top of the pipe barrel from finished surface level is 1,0 m under roads, 1,0m inside road reserves, 0,9 m through cultivated lands and elsewhere.

PSL 5.2 Cutting of pipe ends

If it is necessary to cut pipes, the cut ends shall be turned using a field lathe. Filing of the coupling surfaces of pipes will not be permitted.

PSL 7 Testing

PSL 7.1.2 Supply, install and testing

Supply, install and test fittings at problem areas on existing pipelines to ensure successful pressure tests, including all materials and labour.

PSL 8 Measurement and Payment

PSL 8.2.1 and PSL 7 Supply and lay pipes and specials

No extra payment will be made for any cutting, etc required for permanent closure pipes (see Sub-clause 8.2.1).

No extra payment will be made for testing (as per Clause 7), nor for temporary water supply connections for testing, which will be held to be included in the price for the laying of pipes, valves and specials. The supply and delivery of closure pipes will be measured by number and paid for separately.

The rates for supplying, laying and bedding pipes shall also cover the cost of cleaning the pipeline as specified in SANS 1200L Sub-clause 5.10.

The rates for supplying, laying and bedding pipes shall also cover the cost of testing in short sections.

The rates for the supplying and laying of metal pipes shall include for the cost of corrosion protection as specified.

PSL 8.2.8 Anchor Blocks

Anchor blocks will be measure by volume. The tendered rate shall cover the cost of all work necessary to complete the construction of an anchor block as detailed on the drawings.

PSL 8.2.7 and PSL 8.2.15 Corrosion protection

Notwithstanding SANS 1200L Sub-clauses 8.2.7 and 8.2.15, the rates for pipes, valves, specials and couplings shall also cover the cost of corrosion protection as specified.

PSL 8.2.12 Concrete encasement

Concrete encasement will be measured by volume. The tendered rate shall cover the cost of concrete, formwork, additional couplings, cutting pipes and supplying and fixing of impregnated fibre board as detailed on the drawings.

SANS / SANS 1200 LB - Bedding Pipes

PSLB 3.1 Selected granular material (bedding)

The Contractor may be required (with the Engineer's approval) to use selected granular material obtained from the trench excavation which does not comply with the requirements of Clause 3.1, for the purposes of bedding pipes under sidewalks and in open areas. Where no suitable material is available from the trenches, material will be utilised from borrow pits identified by the Engineer.

PSLB 3.2 Selected fill material

The Contractor may be required (with the Engineer's approval) to use selected fill material obtained from the trench excavations which does not comply with the requirements of Clause 3.2, for the purposes of constructing the compacted selected fill blanket around and over pipes.

PSLB 3.3 Bedding

The bedding for all pipes shall be for flexible pipes, as per detailed drawing SANS 1200 LB-2 and LB-3 compacted to 90% Mod AASHTO density other than in areas subject to traffic load (subject to the qualification described in Clauses PSLB 3.1 & 3.2).

PSLB 3.4 Selection

Wherever practicable, the Contractor shall use suitable material selected from the excavations for bedding and selected fill material.

Add the following sub-clause:

PSLB 3.4.1 Suitable material available from trench excavation

Replace the words "(but is not required)" in the fifth line with the words "(at his own cost)".

"PSLB 3.4.1.1: Contractor required to excavate selectively for bedding materials
Notwithstanding the requirements of 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, the Contractor shall use selective methods of excavating and shall provide and use plant that will enable him to avoid burying or contaminating material that is suitable and is required for bedding."

PSLB 5 Construction

PSLB 5.1.3 Placing

Add the following to sub-clause PSLB 5.1.3.3:

"Hand equipment shall be used to compact the bedding material under the haunches and immediately next to the pipe. No vibratory mechanical equipment shall be allowed to make contact with any part of the pipe or be used on the bedding blanket directly above the pipe."

Add the following new clause:

"PSLB 5.1.3.5: Crushed Stone Bedding

Where the conditions on the trench bottom are so wet that the use of selected granular material is not practical, use will be made of 13,2mm or 19mm single sized crushed stone material from commercial sources. The use of such stone will be entirely at the Engineer's discretion. Refer to PSDB 5.5." The small single sized crushed stone is to be wrapped with Geofabric (Bidum A4 or similar approved) to form a sausage."

PSLB 8.1.3 Measurement of Bedding Material
The side allowance for labour intensive excavation shall be determined in accordance with the relevant project drawing.

PSLB 8 MEASUREMENT AND PAYMENT

PSLB 8.2.2.3 From Commercial Sources
(c)13 mm concrete stone to SANS 1083.....Unit: m^3

Add the following to the end of this subclause:
"Commercial sources shall include off-site sources located by the Contractor."

SANS 1200 LD – SEWERS

PSLD 3 Material

PSLD 3.1.5 uPVC Pipe shall comply with the relevant requirements of SANS 791 and shall have suitable approve flexible joints

PSLD 3.4 Bedding

The requirements for bedding of SANS 1200 LB shall apply

PSLD 3.5 Manholes

PSLD 3.5.2 Precast Concrete Sections shall comply with the applicable requirements of SANS 1294.. Sectional spun concrete cylinders shall have been manufactured from dolomitic aggregate where sp required in terms of the project specification, and shall comply with the requirements for pipes of SC type class A of SANS 677. Joints between cylinders shall be of the interlocking self -centering type. The joints shall be sealed in an approved manner to form a watertight joint.

PSLD 3.5.8 Manhole covers and Frames shall be of Type 2A Circular from Manhole 4 Africa

PSLD 4.1 Pipe Handling and Rigging Equipment

Add the following:
Care must be exercised at all stages during the transportation, handling and laying of pipes to minimise the possibility of overstraining, point loading or otherwise damaging the pipe wall, since this can have a deleterious effect on its long-term performance. uPVC pipes shall always be lifted with fabric straps or hemp rope and not cables or chains. They should not be subjected to impact loads or rolled over rough or hard ground.

Pipes shall be stored on cradles and away from the inflammable liquids or other aggressive materials. Pipe can be stored in the open for a period of 6 months without any detrimental effects being caused by ultra- violet exposure. However, the manufacturer shall be consulted regrading longer periods of storage in the open.

PSLD 4.3 Testing

Add the following:
In addition to pumps, gauges, storage tank, tools, plugs, bracing, and fittings necessary for tests required in terms of Clause 7, the Contractor shall provide suitable equipment for the location of faults up to the date of issue of final certificate.

PSLD 4.4 Pipe Inspection and Repair

(New Clause)
Prior to installation, each pipe, fitting and joint shall be visually inspected both externally and, where practicable, internally for all defects, including indentations, delamination, bubbles, pinholes, blisters, foreign inclusions and resin starved areas.

Damage showing the star cracking on the inner surface or any external damage which cannot be inspected (on assumption that the damage extends through the pipe wall), the pipe shall be rejected and replaced as directed by the Engineer. Areas of tackiness and imperfection to the pipe inner surface shall not be accepted.

Owing to the difficulties of controlling the quality, any repair under site conditions shall not be carried out without the Engineers prior approval.

PSLD 5 CONSTRUTION

PSLD 5.1 Trench Bottom

The trench bottom shall be prepared as specified in SANS 1200DB. Trenches shall be kept sufficiently dry to allow proper and safe bedding, laying and jointing of pipes and kept dry until the pipeline has passed the required tests and construction of the selected fill blanket over the pipes has been completed.

PSLD 5.2 Laying and Bedding Method

The method of laying and bedding shall be such that
(a) Barrels of pipes bear evenly on the bedding for their full length,
(b) No packing is used under barrels, and
(c) No socket or coupling bears on the bedding.
Where the slope of a pipe is greater than 1:10, anchor blocks shall be constructed to the details

Add the following
The UPVC pipes fall into the category of flexible pipes. As such, in the buried condition rely on the pipe-soil structure interaction for their load bearing capacity. Therefore, it is important that the pipes are bedded and surrounded in a material which is capable of transmitting lateral thrust from the pipe to the soil forming the trench wall and that this soil does not become over stressed.

Where groundwater conditions are such that there is a risk of the trench backfill being washed away, suitable impermeable stops (e.g clay dams) shall be provided at appropriate intervals to prevent longitudinal drainage.

Where groundwater is present, the geotextile fabric shall be laid in the excavated trench such that it fully encases the pipe bedding and pipe zone of granular material preferred of a single compacted 20mm aggregate. This is to prevent the fines from the adjacent soil of the trench bottom and walls contaminating the aggregate.

PSLD 5.2.3 Method of laying and bedding shall be such that
a) Barrels of pipes bear evenly on the bedding for their full length
b) No packing is used under the barrels, and
c) No socket or coupling bears on the bedding
Where slope of the pipe is great than 1:10, anchor blocks shall be constructed

PSLD 5.2.4 Cutting

uPVC pipes can be cut with a power driven, abrasive-wheel cutting machine. Burrs and sharp edges shall be removed by filing or grinding and, where required, a chamfer shall be provided. The cut ends shall be resealed to prevent moisture absorption, using a repair resin recommended by the pipe manufacturer and approved by the Engineer. The repair resin must be suitable for contact with potable water.

PSD 5.4.1 Connection into Existing Manholes

The sewer shall be so jointed to the pipes built into manholes that there are two flexible joints on either side of each manhole as shown on the manhole drawing.

(New Clause)

An appropriate item has been allowed in the Bill of Quantities to cover all costs connected with making of this connection.

PSLD 5.6.1 General

Delete in clauses (a) and (b) the word "brick" and replace by "cast in situ concrete"

PSLD 5.6.2.3 Benching

All benching and sloping surfaces of the manhole floor shall be rendered in 20mm thick 1:3 cement mortar and finished smooth and true with a steel trowel and rounded at corners and edges.

PSLD 5.6.3 Step Irons

Step irons shall be accurately built into the straight of the wall as shown on Drawings LD-3 and LD-5 at 300mm centres and staggered regularly rightly and left in truly vertical rows spaced at 200mm centres horizontally. No slings shall be attached to step irons, nor shall step irons be used in any way for lifting.

PSLD 5.6.4 Precast Concrete Manholes
Each precast concrete manhole shall be constructed in accordance with the applicable details shown on Drawing LD -5

OR

Refer to Drawings for details

PSLD 5.6.6 Laying and Jointing of Channels in Manholes

The sockets of channels shall be filled in with 1:1 stiff cement mortar and the space between the channels finished off with the same mortar. Where two spigot ends abut, they shall have a layer of 1:1 cement mortar under the joint, and the space between the ends shall be filled with 1:1 cement mortar worked in and neatly finished off.

PSLD 5.6.8 Finished Cover levels

(New Clause)
Unless otherwise ordered or dimensioned explicitly on the working drawing, the level of the top surface of the cover shall be flush with the final surface of a carriageway, footway or any paved area, 50mm above the surface of a grassed or gravelled verge or service lane, 250 mm above the finished ground level for manholes situated at the midblock of private or municipal property, and 500 mm above ground level in undeveloped open space.

PSLD 5.6.9 Rectification of Infiltration of Water

Any infiltration visible in the manhole channels, pipe ends or benching shall be rectified by demolishing the base and rebuilding. Rectification of infiltration through the walls and or joints may be attempted only by externally applied measures, failing which the manhole shall be demolished and rebuilt.

PSLD 5.9.4 Connection of New to Existing Sewers

(New Clause)

The Contractor shall under no circumstances connect the new sewers into the existing without the prior written instruction of the Engineer. This instruction will only be given after acceptance, by the Engineer, of the new sewer lines and manholes.

PSLD 7 TESTING

PSLD 7.1 GENERAL

Delete wording of clause 7.1.6 and replace with the following:
A torch and mirror test and air test shall be carried out on all pipe lengths up to and including 375mm diameter. A CCTV inspection shall be carried out on the all the sewer lines from the 160mm diameter up to and including 710mm diameter
Deflection of the pipeline may not exceed 3% of the diameter. Any pipes which are cracked or damaged, leaking or incorrectly jointed will be rejected. A written report and electronic footage of the visual inspection, including ovality and gradient, is to be submitted to the Engineer. Practical completion will not be granted until CCTV investigation indicates that the entire pipeline is compliant. The CCTV inspection is only to be carried out after the entire pipeline has been backfilled and inspected by the Engineer and written permission granted. Any pipelines on which repair work is ordered by the Engineer as a result of the CCTV inspection shall undergo further CCTV inspections at the Contractor's cost until such a time as compliance is obtained.

No additional payment shall be made for the initial or subsequent CCTV inspections due to rework, described above the cost thereof shall be deemed to be included in the rates tendered.

The CCTV shall be capable of recording at least 10 readings per 300mm and shall be mounted on a remote control crawler fitted with an inclinometer with an accuracy of less than 1 degree. The ovality and gradient of the 500mm diameter and710mm diameter pipelines are to be checked with a pipeline laser.

PSLD 7.2.6 Water tightness of Manholes

Especially in areas where the water table is high, a test, as detailed hereafter, to verify the water tightness of any manhole may be requested by the Engineer's Representative.

Infiltration: The excavation surrounding the manhole shall be flooded to approximately the top of wall level and this depth of water maintained for at least 48hrs. The manhole will have satisfied the test requirements provided there is no sign of infiltration of water.

Exfiltration: The manhole shall be filled with water on the top of its wall level and this depth maintained for at least 24 hrs.

At the end of the subsequent 24 hrs period the drop in water level is to be measured. The manhole will have satisfied the test requirement provided the drop is less than 75mm per meter in depth of the manhole measured from channel invert to the original height of the water. At the discretion of the Engineer's Representative a shorter testing time, minimum of 3hrs, will be allowed in which case a 'drop in level' pro rata to the time tested, shall be used.

PSLD 8 MEASUREMENT AND PAYMENT

PSLD 8.2.3 Precast Manholes
Add the following
The rate shall cover the cost of dealing with any excavation (in all materials including disposal of surplus) that is additional to that measured under the item for pipe trench excavation, and the cost

of construction of the manholes complete with short pipe and all flexible couplings in accordance with the drawing supplied.

PSLD 8.2.5 Inspection Chamber, etc

The rate shall cover the cost of dealing with any excavation (in all material including disposal of surplus) that is additional to that measured under the item of pipe trench excavation and the cost of construction of the manholes complete with short pipes and all flexible coupling in accordance with the details shown on the drawing

PSDL 8.2.6 Erf Connection

The rate shall cover the cost of additional excavation in all materials, backfilling, bedding, disposal of surplus material, and the supply and laying of the Y-junction and the connection pipeline up to the erf boundary

PSLD 8.2.11 Connection to existing sewers

The cost of the connections shall be extra over cost of constructing each manhole and shall include for all additional costs of carrying out the connections.

PSLD 8.2.12 Raising or Lowering of Existing Manhole
The rate shall cover the cost of removing the cover and frame, demolishing the top of the manhole if required, providing materials and labor for rebuilding the manhole to the designated new level, and setting and grouting the cover and frame to the correct level.

PSLD 8.2.13 Testing for water tightness of manhole and chambers

(New Clause)

The rate shall cover the supply of water, plugs, pumping and any other costs incurred in carrying out the initial tests which showed the manhole to be acceptable. The costs of failed tests and the subsequent tests to prove water tightness will not be recoverable.

3.4 PARTICULAR SPECIFICATIONS

PLI: PARTICULAR SPECIFICATION FOR GENERIC LABOUR-INTENSIVE SPECIFICATION

PLI 1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

a) Excavation to expose existing services.
b) Construction of manhole base
c) Pipe laying and fittings
d) Construction of berms
e) Preparation of bedding material for pipes.
f) Fence removal & fencing
G) Pipe Burst Replacement

PLI 2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

PLI 3 Hand excavatable material

Hand excavatable material is material:

(a) Granular materials:

(i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or

(ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100 mm.

(b) Cohesive materials:

(i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

(ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

Note: (1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.

(2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

Granular materials		Cohesive materials	
Consistency	**Description**	**Consistency**	**Description**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30 – 40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

PLI 4 Trench excavation

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

PLI 5 Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100 mm. Each layer shall be compacted using hand stampers.

(a) to 90% Proctor density;

(b) such that in excess of 5 blows of a dynamic come penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10 mm and contains no isolated boulders, or

(c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

PLI 6 Excavation

All hand excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

PLI 7 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

PLI 8 Shaping

All shaping shall be undertaken by hand.

PLI 9 Loading

All loading shall be done by hand, regardless of the method of haulage.

PLI 10 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

PLI 11 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

PLI 12 Spreading

All material shall be spread by hand.

PLI 13 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

PLI 14 Grassing

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

PLI 15 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Grout shall be mixed and placed by hand.

PLI 16 Manufactured elements

Elements manufactured or designed by the contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320 kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

C3.5 MANAGEMENT OF THE WORKS

C3.5.1 GENERIC SPECIFICATIONS

The SANS 1200 Standardized Specifications listed in C3.3.1 are applicable.

C3.5.2 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

(a) Construction Regulations, 2014

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 (the regulations) as promulgated in Government Gazette No 37305 and Regulation Gazette No 10113 of 7 February 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Project Specifications, Schedule of Quantity and Drawings, as well as in the Employers' health and safety specifications (regulation 4(1)) of the Construction Regulations 2014.

The Contractor shall in terms of regulation 5(1) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

A payment item is included in the Schedule of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

C3.5.3 ENVIRONMENTAL MANAGEMENT REQUIREMENTS

The Contractor will be responsible for implementing and managing an Environmental Management Plan. Refer to Annexure B which defines the roles and responsibilities of various members of the Contractor’s staff in terms of the Environmental Management Plan.

C3.5.4 CONTRACTORS PROGRAMME

Clause 5.6 of the Conditions of Contract requires the Contractor to submit a programme for the execution of the works. In addition to the requirements of clause 5.6 the format and information shown shall comply to the following.

The Contractor shall submit his programme in a bar chart format showing clearly the following:

The various stages of work planned to be completed per week.

Critical path activities.

Anticipated value of work to be done during each month.

His labour resources schedule which must distinguish between the Contractor’s permanent labour and his temporary local labour employment.

The lead time for training of local labour.

When drawing up his programme, the Contractor shall, among other issues, take into consideration and make allowance for:

Expected weather conditions and their effects.
The requirements and effects of employing labour intensive construction methods.
The accommodation and safeguarding of public access and traffic.
The lead time required for compliance with the Environmental Management Plan
The lead time required for compliance with the Health and Safety Specification

Failure to produce a programme may prejudice the Contractor in any claim for an extension of time.

C3.5.5 TRAFFIC CONTROL ON ROADS

Interruptions to traffic on public roads will be kept to a minimum and where interruptions are unavoidable, they will be done with the full complement of warning signs as required by the Road Traffic Sign Manual.

C3.5.6 UNAUTHORISED PERSONS

The Contractor shall keep unauthorized persons from the works at all times Under no circumstances may any person except guards be allowed to sleep on the building site.

C3.5.7 FORMS FOR CONTRACT ADMINISTRATION

The Contractor to submit completed MIG progress report and the forms will be available from the Engineer's office. This report is to be submitted with the payment certificate to the Engineer's office by the 15th of every month. EPWP Labour forms must be submitted with the Contractor's invoice.

C3.5.8 ELECTRONIC PAYMENTS

The Contractor to supply his banking details and a cancelled cheque with his first payment certificate.

C3.5.9 DAILY RECORDS

Daily records of human resources, equipment employed, or site diaries in respect of work performed on the site, to be kept in the Contractor's site office for use by the Engineer whenever required.

C3.5.10 PERMITS

The Contractor will be responsible for timeously obtaining any permits required to undertake his envisioned construction activities.

C3.5.11 PROOF OF COMPLIANCE WITH THE LAW

- Contactor to provide all the necessary Health and Safety Documents prior to commencement of the Works.
- All blasting requirements to be complied with.
- All environmental legislation to be complied with.

- Environmental Method Statement.

C3.5.12 MANAGEMENT MEETINGS

Site meetings, Technical meetings and Project Steering Committee meetings will be held once per month.

C3.5.13 APPLICABLE PARTICULAR SPECIFICATIONS

The following particular specifications are included as annexures at the end of Scope of Work: Part C3.

PS H&S: Health and Safety Specification

PS EM: Environmental Management Plan

The following particular specifications are included at the end of Section 3.3.5:

PS PLI: Particular Specification for Generic Labour-Intensive Construction

C3.5.14 MATERIAL COMPLIANCE WITH SANS/SANS REQUIREMENTS

Where materials to be used in the works are required to comply with a SANS/SANS specification, they will be accepted as complying with the SANS/SANS specification if one of the following is satisfied.

The display of a SANS/SANS mark on the product with a copy of the SANS/SANS certificate that allows the manufacturer to use the mark, or

All the criteria in the relevant SANS/SANS specification is measured and confirmed on site or in an approved laboratory.

The same will apply to materials specified to comply with ISO, BS, ASTM or other international specifications.

C3.5.15 PERMITS AND WAYLEAVES

C3.5.16 WATER FOR THE WORKS

The Contractor will make his own arrangements with regard to obtaining water for construction and testing of water pipelines.

The domestic supply that is to be made as part of the works may be utilized where small quantities of clean water is required, provided the usage is measured and the Employer is compensated for the cost of the water.

C3.5.17 GOVERNMENT REGULATIONS – REPUBLIC OF SOUTH AFRICA (RSA)

The plant used in the execution of the Contract is to satisfy the requirements of the Factories, Machinery and Building Work Act (No. 22 of 1941) or any amendment thereof, including such regulations as may be framed there under at any time up to and including the date of completion of the Contract. The plant shall also comply with any other government regulations controlling the installation and operation of the entire equipment.

If any additional work is ordered by a Government inspector to make the plant comply with regulations referred to above, the Contractor shall forthwith carry out such work at his own cost.

C3.5.18 ADDITIONAL SPECIFICATIONS

Health & Safety Specification

CLIENT OHS SPECIFICATION

O. R. TAMBO DISTRICT MUNICIPALITY

CLIENT

NME & BMID

CONSULTING ENGINEERS / PROJECT MANAGERS

ABBREVIATIONS

AIA: Approved Inspection Authority
CHSO: Construction Health & Safety Officer
CC: Compensation Commissioner
CR: Construction Regulations 2014
DME: Department of Mineral and Energy
DMR: Driven Machinery Regulations
DoL: Department of Labour
FEMA: Federated Employers Mutual Association
GAR: General Administration Regulations
GSR: General Safety Regulations
HIRA: Hazard Identification & Risk Assessment
H&S: Health and Safety
OHSA: Occupational Health and Safety Act No. 85 of 1993 (as amended)
OHSS: Occupational Health and Safety Specification
PSHSS: Project Specific Health and Safety Specification
PC: Principal Contractor
PPE: Personal Protective Equipment
PPC: Personal Protective Clothing
ER: Engineer's Representative
RHCS: Regulations for Hazardous Chemical Substances
SANS: South African National Standards (Authority)
SMME: Small, Micro, Medium Enterprise
SWP: Safe Work Procedure
HCS: Hazardous chemical substances

CS1 General Statement and Interpretations

Occupational Health and Safety Act, Act 85 of 1993 shall apply to this Contract. The Construction Regulations promulgated on 7 February 2014 and incorporated into the said Act by Government Notice R. 84, published in Government Gazette 37305 apply to any person involved in construction work. These regulations are hereinafter referred to as "the Construction Regulations" and the said Act as "the Act".

Definition as the Construction Regulations 2014 applicable to this Health and Safety Specification:

"agent" means a competent person who acts as a representative or a client;

"angle of repose" means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on the surface, rather than sliding or crumbling away;

"bulk mixing plant" means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

"client" means any person for whom construction work is being performed;

"competent person" means a person who has, in respect of the work or task to be performed, the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act;
"construction manager" means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;
"construction site" means a workplace where construction work is being performed;
"construction supervisor" means a competent person responsible for supervising construction activities on a construction site;
"construction vehicle" means a vehicle used as a means of conveyance for transporting persons or material, or persons and material, on and *off* the construction site for the purposes of performing construction work"construction work" means any work in connection with-

1. the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to 5 a building or any similar structure; or
2. the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

"construction work permit" means a document issued in terms of regulation 3;
"contractor" means an employer who performs construction work;
"demolition work" means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;
"design" in relation to any structure, including drawings, calculations, design details and specification
- "designer" means a competent person who:-

1. prepares a design;
2. checks and approves a design;
3. arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
4. designs temporary work, including its components;
5. an architect or engineer contributing to, or having overall responsibility for a design;
6. a building services engineer designing details for fixed plant;
7. a surveyor specifying articles or drawing up specifications;
8. a contractor carrying out design work as part of a design and building project; or
9. an interior designer, shop-fitter or landscape architect;

"excavation work" means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;
"explosive actuated fastening device" means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;
"fall arrest equipment" means equipment used to arrest a person in a fall, including personal equipment, a body harness, lanyards, deceleration devices, lifelines or similar equipment;
"fall prevention equipment" means equipment used to prevent persons from falling from a fall risk position, inducing personal equipment, a body harness, lanyards, lifelines or physical equipment such as guard-rails, screens, barricades, anchorages or similar equipment;
"fall protection plan" means a documented plan, which includes and provides for -

1. all risks relating to working from a fall risk position, considering the nature of work undertaken;
2. the procedures and methods to be applied in order to eliminate the risk of falling;
3. and a rescue plan and procedures;

"fall risk" means any potential exposure to falling either from, off or into;
"health and safety file" means a file, or other record containing the information in writing required by these Regulations "health and safety plan" means a site, activity or project specific documented plan in accordance with the client's health and safety specification;
"health and safety specification" means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;
"material hoist" means a hoist used to lower or raise material and equipment, excluding passengers;
"medical certificate of fitness" means a certificate contemplated in regulation 7(8);
"mobile plant" means any machinery, appliance or other similar device that is able to move independently, and Is used for the purpose of performing construction work on a construction site;
"person day" means one normal working shift of carrying out construction work by a person on a construction site
"principal contractor" means an employer appointed by the client to perform construction work;
"Professional Engineer or Professional Certificated Engineer" means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);
"Professional Technologist" means a person holding registration as Professional Engineering Technologist in terms of the Engineering Profession Act, 2000.
"provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations, 2003;
"scaffold" means a temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;
"shoring" means a system used to support the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation;
"structure" means-

1. any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, earth retaining structure or *any* structure designed to preserve or alter any natural feature, and any other similar structure;
2. any falsework, scaffold or other structure designed or used to provide support or means of access during construction work; or
3. any fixed plant in' respect of construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling;

"temporary works" means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work;
"the Act" means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

Refer to Occupational Health and Safety Act, Act 85 of 1993 and regulations for more definitions

CS1.1 Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification will be included in the tender documents as part of the Project Specifications.
PURPOSE:
The Employer is obligated to implement measures to ensure the health and safety of all people and properties affected under its custodianship or contractual commitments, and is further obligated to monitor that these measures are structured and applied according to the requirements of these Health and Safety Specifications.

The purpose of this specification document is to provide the relevant Principal Contractor (and his /her contractor) with any information other than the standard conditions pertaining to construction sites which might affect the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; and to protect persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work during the carrying out of construction work. The Principal Contractor (and his /her contractor) is to be briefed on the significant health and safety aspects of the project and to be provided with information and requirements on inter alia:

1) safety considerations affecting the site of the project and its environment;
2) health and safety aspects of the associated structures and equipment;
3) submissions on health and safety matters required from the Principal Contractor(and his /her contractor); and
4) the Principal Contractor's (and his /her contractor) health & safety plan.

Serve to ensure that the Principal Contractor (and his /her contractor) is fully aware of what is expected from him/her with regard to the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Regulations made there-under including the applicable safety standards, and in particular in terms of Section 8 of the Act.

To inform the Principal Contractor that the Occupational Health and Safety Act, 1993 (Act 85 of 1993) in its entirety shall apply to the contract to which this specification document applies.

(b) The Contractor's Health and Safety Plan

The successful Tenderer shall, on receipt of notification that he has been awarded the contract, submit without delay his own documented Health and Safety Plan for the execution of the work under the contract. His Health and Safety Plan must at least cover the following:

(i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Construction Regulations 2014;

(ii) Pro-active identification of potential hazards and unsafe working conditions;

(iii) Provision of a safe working environment and equipment;

(iv) Statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas; monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;

(v) Details of the Construction manager, alternate construction manager, Construction Supervisor, Risk assessor, Construction Safety Officer, First aider and other competent persons he intends to appoint for the construction works in terms of Construction Regulation and other applicable regulations; and details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

CS1.1.1 The Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and the Construction Regulations.

CS1.1.2 The Contractor shall consistently demonstrate his competence and adequacy of resources to perform the duties imposed on the Contractor in terms of this Specification, the Act and the Construction Regulations.

CS1. 2Indemnity of Employer and his Agents (Mandatory agreement OHS Act 37(2))

a) The annexures to this Contract Document contain a "Mandatory Form of Authority and Agreement in terms of Section 37(2) of the Occupational Health and Safety Act, No. 85 of 1993" which agreement shall be entered into and duly signed by both the Employer and Contractor

prior to commencement with work. A copy of the signed agreement shall be included in the Contractor's health and safety plan.

b) Any acceptance, approval, check, certificate, consent, examination, inspection, instruction, notice, observation, proposal, request, test or similar act by either the Employer, any of his agents or the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, the Act and the Construction Regulations, including responsibility for errors, omissions, discrepancies and non-compliances.

CS1. 3Scope

The scope of this Occupational Health and Safety Specification is to address the reasonable and foreseeable aspects of occupational health and safety management which will be affected by the contract work.

The specification will provide the requirements that the Principal Contractor and other contractors shall comply with in order to reduce the risks associated with the contract work which may lead to incidents causing injury and/or ill health or degradation of the environment, to a level as low as reasonably practicable and possible.

The Contractor shall ensure that it is fully conversant with the requirements of this Specification.

This Specification is not intended to supersede the Act nor the Construction Regulations. Those sections of the Act and the Construction Regulations, which apply to the scope of work to be performed by the Contractor in terms of this Contract, continue to be a legal requirement of the Contractor. The principal Contractor will be appointed in writing to be in overall control of the Construction site.

Extent of works

a) A rectangular reinforced concrete biological reactor complete with reinforced concrete aerator bridges and stainless steel hand railing, access stairs and platforms where necessary. The capacity of biological reactor calculated based on the flow. The tank is rectangular in shape, 5m deep, 32.250m long and has a value of 48.75m³
b) Once circular reinforced concrete settling tank with nominal diameter of 14.20m and depth of 3.4m.
c) 7 days water tight test for two concrete structure
d) Roads and bulk earthworks
e) Pavement for parking
f) Sludge drying beds access road
g) All necessary bulk earth works
h) Pipe work to connect the new structures to existing (HDPE)
i) Landscaping of the Wastewater Treatment plant
j) Hand railing of the Wastewater Treatment plant
k) Concrete palisade fence
l) Guard house

CS1.4 Responsibilities

CS1.4.1 Client

- The Client or his appointed Agent on his behalf will appoint each Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Bills of Quantities.
- The base line risk assessment will be issued to the appointed contractor on request
- The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan of the both Principal Contractor and Contractor for approval.
- The Client or his appointed Agent on his behalf will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Contractor is implemented and maintained. The

steps taken will include periodic audits at intervals of at least once every month and such visits may be done without any form of notification to the PC to ensure continuous compliance.

- The Client or his appointed Agent on his behalf will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:

• have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
• have failed to implement or maintain their health and safety plan;
• have executed construction work which is not in accordance with their health and safety plan; or
• act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

CS1.4.2 Principal Contractor:

- The Principal contractor is urged to conduct its base line risk assessment during the briefing session/clarification meeting.
- The Principal Contractor shall accept the appointment under the terms and Conditions of Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 4 of the Construction Regulations. Annexure 2 of the Construction regulations 2014 contains a "Notification of Construction Work" form. The Principal Contractor shall submit the notification in writing prior to commencement of work and inform the Client or his Agent accordingly.
- The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with. The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.
- The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.
- The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement with the works.
- The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.
- The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.
- The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.
- The Principal Contractor shall, throughout execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor.
- The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.

CS1.5 Policies and Procedures

The Contractor shall submit their Health and Safety Policy, prior to construction commencement, signed by the Chief Executive Officer. The Policy must outline objectives and how they will be achieved and. implemented within the company operations. The PC shall also ensure that the following policies and procedures but not limited to, are included in the OHS file:

- Substance abuse policy
- Disciplinary procedure
- Smoking policy
- HIV/AIDS policy
- PPE & PPC policy

CS1.6 Organogram

The Contractor shall submit an organogram, prior to construction commencement, outlining the Health and Safety Site Team that will be assigned to the project, if successful with the tender. In cases where appointments have not been made, the organogram shall reflect the position. The organogram shall be updated, when there is a change in the site team.

CS1.7 Compensation Commissioner

The Contractor shall provide **a valid** proof of registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement of construction activities.

CS1.8 Notification of Construction Work – CR 4

The Contractor shall notify the Provincial Director of the Department of Labour of the intention to commence construction work at least 7 days prior to the works commencing if the intended construction work will:

- Include excavation work
- Include work at height where there is a risk of falling
- Include the demolition of a structure, or
- Include the use of explosives to perform construction work.

If the construction work involves construction of a single storey dwelling for a client, and such dwelling he will be residing in such dwelling upon completion, the contractor must also notify the Provincial Director of the Department of Labour at least 7 days before the works commence. This must be done on a form similar to an Annexure 2 (template of which can be found in the Construction Regulations, 2014). A copy of the notification letter to the Provincial Director shall be forwarded to the Client for record purposes.

CS1.9 During the construction period

Continuous/Issue-based Risk Assessments shall be done during the construction period as and when the scope of work changes indicating new introduced hazards.
Additional appointments shall follow as required by the Risk Assessment.
The Employer's H & S Agent will take reasonable steps to ensure that the Contractor's Health and Safety plan is implemented and maintained. The steps taken will include periodic audits at mutually agreed intervals at least once every month, however, **if the Employer's Agent determines that the Principal Contractor does not comply with the provisions of the ACT or only complies when the Audit date approaches, HE/SHE reserves the right to visit the site without any form of notification to verify continuous compliance on site.**
Protective clothing as determined by the Risk Assessment shall be issued and the employees shall sign the issue register to indicate the type and number of equipment received by each employee
Proof of training in the form of a register signed by the trained employees shall be kept in the H&S file. The contents of the training shall also be displayed in the H&S file.

Please note: The SHE agent may randomly select employees on site and assess their knowledge against the material they have been trained on.

Appointments of people/workers related to Health and Safety as required by law and the Risk Assessment shall be done prior to the commencement of any work. Letters of appointment shall be kept in the H&S file for inspection by the Client, Agent or any Inspector.

Prior to builder's holiday PC shall develop a shutdown procedure and submit it to the Client agent for approval

CS1. 10 Health and Safety Program/File

The following documentation shall be included in the Health and Safety File but not limited to:

a) Copy of OHS Act and applicable Regulations.
b) Copy of Client Health and Safety specification, Principal contractor's Health & Safety Plan.
c) Copy of all Drawings – Schematics, Detail Drawings, etc.
d) Copy of Notification of Construction work to the Department of Labour.
e) Company Safety Policies (OHS policy, smoking policy, substance abuse policy, PPE policy, HIV/AIDS policy etc.) – To be signed by the Chief Executive Officer of the Company.
f) Organogram indicating site specific organizational structure with reference to requirements of the construction regulations.
g) Proof of Registration with Compensation Fund of Principal Contractor and Contractors.
h) Method statements, risk Assessments and safe work procedures for all activities on site as per construction works programme (project scope of work).
I) Letters of Appointment and proof of competence.
j) Inspection registers
k) Material safety data sheets
l) The contents of all Training Material e.g. Formal training, Informal training, induction, DSTI's
Toolbox talks, HIV/AIDS etc.
m) Emergency preparedness and response plan with site specific telephone numbers
n) Section 37(2)/Mandatory agreement
o) Site specific Fall protection plan
P) Waste management Plan
q) List of Contractors (Sub-Contractors)
r) List of Local Labours with ID copies
s) Environmental management plan
t) All applicable permits
u) Disciplinary procedures
v) H & S budget
w) Scope of work
x) Committee meetings and SHE audit reports

CS1. 11 Appointments

The following appointments are required for the project. Deviations will only be allowed with the approval of the Agent. Appointment of an employee for more than one responsibility may be allowed on approval by the Agent.

Basic Appointments:

- Appointment of Principal Contractor by Client.
- Appointment of Contractors (Sub Contractors) by Principal Contractor (where applicable)
- Appointment of Construction manager (Full time)
- Appointment of Alternate construction manager
- Appointment of Construction Work Supervisor (Full time)
- Appointment of Assistant Construction Work Supervisor
- Appointment of Health & Safety Officer (Full time)

Appointments of Specialists (Refer to a Specialist Company):

- Appointment of Safety Manager

- Appointment of Risk Assessor and plan developer
- Appointment of a Health and Safety Induction Trainer
- HIV/AIDS trainer
- Traffic Safety Officer (where applicable)
- Fall protection plan developer
- Troxler operator
- Blasting competent person

Appointments of full time employees on site:

- Appointment of a SHE Representative (Competent employee to control/monitor all H&S activities).
- Appointment of Emergency co-ordinator
- Appointment of an Accident and Incident Investigator.
- Appointment of the Safety Committee Members (Employees actively involved in H&S).
- Appointment of an Excavation Inspector.
- Appointment of Construction Vehicle and Mobile Plant Inspector.
- Appointment of Construction Vehicle and Mobile Plant Operators.
- Appointment of batch plant/Concrete Mixer Operator (if required).
- Appointment of Hand Tool Inspector.
- Appointment of a Portable Electrical Equipment Inspector (If required).
- Appointment of a Fall protection supervisor
- Appointment of a Ladder Inspector (If ladders are used).
- Appointment of scaffold inspector.
- Appointment of scaffold erector
- Appointment of formwork supervisor
- Appointment of demolition supervisor
- Appointment of hazardous chemical controller
- Appointment of stacking and storage supervisor
- Appointment of Flagmen
- Appointment of a Hygiene and Facility Inspector (Ablutions and eating places).
- Appointment of Fire Equipment Inspector.
- Appointment of Fire Team Members (employees trained in firefighting awareness).
- Appointment of First Aid Equipment Inspector.
- Appointment of First Aid Team Members (employees trained in first aid awareness)

CS1.11.1 Safety Officer (CR 8.7)
Due to the nature of the activities on site it is required to appoint a full-time competent Health and Safety Officer with at least 2 years' experience in SHE management. The Safety Officer shall be in possession of a minimum qualification of SAMTRAC or any other equivalent safety management programmes

The Safety Officer shall be employed by the Principal Contractor on a full-time basis for the duration of the project.
The functions of the Safety Officer will be to monitor all H&S Activities on site on a daily basis.
CS1. 11.2 Contractor's SHE Representative - OHSAct 17
The Contractor shall designate a competent Safety, Health and Environmental representative (SHE Rep) who shall be acceptable to the Agent, to represent and act for the Contractor. The Contractor shall inform the Agent in writing of the name and address of the Contractor's SHE Rep and of any subsequent changes in the name and address of the SHE Rep, together with the scope and limitations of the SHE Rep's authority to act for the Contractor. The Contractor's SHE Rep shall make available to the Employer an all-hours telephone number at which the SHE Rep can be contacted at any time in the event of an emergency involving any of the Contractor's employees, or other persons at the Works.

CS1.11.3 Health & Safety Committee- OHSAct 20

Where two or more health and safety representatives have been elected and appointed on site, the Contractor shall ensure that monthly health and safety meetings are held with such representatives and minutes are kept on record. Meetings must be organized and chaired by the Contractor's Health and Safety Committee Chairperson. Minutes of these meetings must be available for the employees of the contractor to refer to.

CS1. 8.4 Supervision of Construction Work– CR 8 (5)
The Principal Contractor as well as his Contractors (Sub Contractors) shall appoint competent full-time employees in writing as the construction supervisors.

CS1. 12 Training and Competence

The Contractor shall quarterly conduct a training needs analysis to ascertain what health and safety training is required. A plan of action should be devised and forwarded to the Client for records, once the identified people have attended the training, the Contractor must provide the Client with copies of certificates obtained.

Induction

No Contractor may allow or permit any employee or person to enter site unless they have undergone health and safety induction training pertaining to the hazards prevalent on site at the time of entry. This includes visitors to site. The Contractor must ensure that visitors to site have the necessary protective equipment. A copy of attendance registers of all employees who attend inductions shall be kept.

Awareness

The Contractor shall conduct periodic toolbox talks on site, preferably weekly or before any hazardous work takes place. The talks shall cover the relevant activity and an attendance register must be signed by all attendees. This record of who attended and the content of the topic will be kept on the site health a safety file as evidence of training.

Competency

After the Contractor has identified the training to be conducted as part of the competency requirement, and based on Risk Assessment, he shall send the relevant persons- on appropriate courses and keep certificates of training for reference. Familiarity with the Health and Safety Act and Regulations is an integral part of the definition of competence.

CS1. 13 Risk Assessment – CR 9

The Principal Contractor as well as all other Contractors shall appoint a competent person in writing to carry out a risk assessment before any construction work is started.
The Risk Assessment shall form part of the Health and Safety Plan.
The Risk Assessment shall include:

- Risk assessment procedure
- Identification of hazards and risks.
- Rating matrix
- Control measures to mitigate risks.
- A monitoring and review plan

Copies of the risk assessment shall be available on each site for inspection.
All employees shall be informed, instructed and trained by an appointed competent person regarding all hazards and work related procedures.

CS1. 14 Existing Services

Contractor must establish all local services in area of excavations.
Plan of local services shall be documented in the Health and Safety file.
Local services include:
Pipe lines, Electricity Supplies and other similar services.

CS1. 15 Safe Working Loads

The Contractor shall ensure that -

a) The safe working loads of hoists, load-bearing beams and cranes are prominently displayed at all times.
b) The safe working loads are not exceeded under any circumstances.
c) All lifting gear is marked with a unique identity number and recorded in register.

CS1. 16 Machine Guarding

All power tools and machinery driven by belts, gears, ropes, chains, couplings and similar drives shall be adequately guarded. The Contractor shall prohibit the use of any equipment with a damaged, missing or inadequate guard.

CS1. 17 Construction Vehicles and Mobile Plant – CR 23

The Contractor shall ensure that drivers of motor vehicles are in possession of a driver's licence, valid for the class of vehicle which they are required to drive, and shall produce the licence on request.
The Contractor shall not permit any driver to be in control of a vehicle at the Works while under the influence of alcohol, drugs or other substance.
All vehicles of the Contractor shall display a name board bearing the Contractor's name. Hired vehicles shall bear an identifying sticker.
A register shall be kept of workers operating construction vehicles and mobile plant.
The register shall contain proof of training of operators to operate construction vehicles and mobile plant, certification of competency and authorization of operators to operate machinery, vehicles or plant.
Names of operators and their relevant training with date and time stamps together with name of course instructor shall be kept in the Health and Safety File on site.
Physical and psychological fitness shall be proved by way of a medical certificate of fitness of the said operators before allowing operators to operate machinery, vehicles or plant. Medical fitness certificates shall only be issued by a registered occupational medical practitioner.

The Health and Safety File shall include the written training material offered to operators for the different construction vehicles and mobile plant.

Each and every driver shall be trained on risks involved and safety procedures.
All Construction vehicles and mobile plant must be of acceptable design and construction and used according to their design.
All construction vehicles and mobile plant must be maintained in good working order.
A register of all vehicles and plant shall be kept on site together with names of operators responsible for each.
The register shall report all maintenance activities performed on these vehicles and plant as well as signatures certifying the condition of the vehicles as in a good working order.
All requirements on the vehicles and mobile plant with regard to safety and health shall be inspected and certified.
These requirements include:

a) Portable fire extinguishers mounted in specified positions on construction vehicles – 4kg dry powder fire extinguisher
b) Inspection for leaking fuel or gasses which can cause a fire hazard
c) Safe and suitable means of access
d) Adequate signalling or other control arrangements to guard against the dangers relating to movement of vehicles and plant.

Attention must be paid to

i) Turn indicators
ii) Stop lights x 2 – where poor visibility conditions warrant
iii) Reverse siren or acoustic device
iv) Tail lights
v) Reflectors
vi) Head lights x 2 – where poor visibility conditions warrant
vii) Rotating amber flashing light with lens heights of at least 200mm and an Output of at least 100Watt on roof or other visible position
viii) Warning boards mounted at least 1.5m above ground level to be clearly visible.

ix) Inspections of appropriate structures fitted to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn
x) Appropriate seats must be firmly secured and adequate in number on vehicles used to transport employees

During use of Construction vehicles or mobile plant the following rules shall be adhered to:

1. Construction vehicles or mobile plant must be prevented from falling into excavations, water or any other area lower than the working surface. This protection must consist of adequate edge protection e.g. guard rails and/or crash barriers.
2. No person shall be allowed to or require to ride on any Construction Vehicle or Mobile Plant in a position otherwise than a safe place provided for on the construction vehicle or mobile plant as designed for that purpose.
3. The construction site must be organized in such a way that as far as is reasonably practical, pedestrians and vehicles can move safely and without risks to health and safety.
4. Traffic routes shall be of sufficient size, sufficient in number and in suitable positions to be used safely by construction vehicles, mobile plant and pedestrians.
5. Each and every traffic route shall be indicated by suitable signs for reasons of safety and health.
6. No tools and/or material shall be transported in the same compartment as the operators/drivers/employees unless the said are secured against movement during transportation.
7. All Construction Vehicles and Mobile Plant left unattended at night adjacent to a public road in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of vehicles or plant.
8. TLB's, Excavators and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set.
9. Reflective indicators must be provided to workers in the form of reflective yellow jackets or vests as specified and worn by workers working on/or adjacent to public roads.
10. No major plant repairs may be carried out on site

CS1. 18 Signs and Notices

The use of colour codes, symbolic signs and notices are means of communication whereby information is visually conveyed to people and also provides early warning of dangers.
Safety signs provide for immediate recognition of danger, information, actions allowed or not allowed and procedures that have to be done.
There are 5 types of safety signs:

1. Black triangle on yellow background=> WARNING
2. Red (round) on white background => PROHIBITORY
3. White on blue background => MANDATORY
4. White on green background => INFORMATION
5. Red (square) on white background => FIRE

The following signs shall be provided for on the site:

Warning signs	-	DANGER - MEN AT WORK
Prohibitory signs	-	NO ENTRY, NO SMOKING
Fire	-	POSITION OF EQUIPMENT ARROWS
First Aid	-	INFORMATION SIGNS
Emergency Signs	-	ASSEMBLY POINT, ESCAPE ROUTES SIGNS

All signs shall be new or in good condition and approved by the Engineer.
All temporary signs shall be mounted on portable supports to facilitate moving.
Defective or missing items shall be replaced immediately.
All signs shall be inspected at least twice a day.
Signs to be displayed will be determined by the H&S Plan and the Risk Assessments.
Compulsory signs will include:
Prohibited area
Men at work

A H&S board shall be displayed at the entrance with all the relevant H&S instructions and symbols eg:
Construction Site – No Entry
Hard hat area
Safety shoes shall be worn
The size of the board shall be at least 1.5m wide by 1.2m high

CS1.19 Excavation Work – CR 13

Excavation:
Definition: A space made by digging.

1. An excavation could be a hole or trench of any size and shape.
2. A Risk Assessment must be done prior to making an excavation.
3. The following must be taken into consideration when doing the Risk Assessment:
   - ⇨ Depth of the excavation
   - ⇨ Length of the excavation
   - ⇨ Existing services
   - ⇨ Barricading and demarcation

Depth of the excavation:

1. Should an excavation be more than chest deep (1.5m), it must be adequately shored or braced.
2. Slopes or trenches shall be as flat as possible, 1 x vertical to 2 x horizontal must be considered maximum for dry conditions. In wet conditions either a much lower slope shall be used, or if space is a constraint, shoring and de-watering shall be applied.

A competent person shall be appointed to supervise excavation work.
Stability evaluation of ground must be done by the Principal contractor and a consulting Engineer shall be notified in writing for certification.
A plan for prevention of persons being trapped due to collapse shall be provided by Contractor.
The design of shoring shall be documented by Contractor in the Health and Safety file as provided by the competent designer of shoring.
The maximum loading of sides of an excavation must be documented in a usable format.
If adjacent structures and buildings are present and can be affected a design and construction of supporting details shall be represented.
Provision shall be made for access routes to the excavation. Routes must not be more than 6 meters away from worker.
Contractor must establish all local services in area of excavations.
Plan of local services shall be documented in the Health and Safety file.
Local services include:
Telkom, Water, Electricity Supplies and other similar services.
Inspection shall be done on all bracing and shoring on a

- daily basis
- prior to each shift
- after every blasting operation
- after an unexpected fall of ground
- after substantial damage to supports
- after rain

An inspection register shall be completed by the Excavation Inspector during each and every inspection.
Excavations must be provided with clearly visible boundary indicators and illuminated at night or where/when visibility is poor.
Excavations must be adequately barricaded and such barricading material shall be periodically maintained.
It is advised to use 1.2m high PVC net (barrier netting) and erected as close to the excavation as possible, when accessible by public or other employees, or adjacent to public roads or thoroughfares, **NO danger tape shall be used**.
Explosives regulations must be adhered to if explosives are required to carry out the excavation. Competent persons with blasting certificates must be in charge.

Warning signs must be posted next to an excavation in which persons are working or carrying out inspections or tests.

CS1.20 Blasting

PC shall appoint a competent person approved by relevant Departments to perform blasting operation.
Transportation, storage and use of explosives shall be shall be carried out as per explosive regulations.
PC to obtain all permits applicable to explosive regulations prior to commencement of blasting activities.

CS 1.21 Radiation (Troxler)

PC shall apply for an authority from the Dept. of health, Radiation control, Radioactive nuclides in terms of section 3A of hazardous substances Act, 1973 (Act 15 of 1973) to use convey, process and cause to convey radioactive nuclides.
The operation, storage and transportation of radioactive nuclides shall be carried out as per Hazardous substance Act of 1973 and manufacture's specification.
Only trained personnel shall use, store or transport radioactive nuclides
Inspections shall be carried out as per manufacturer's specification

CS1. 22 Barricading and Demarcation

The construction site shall be sealed off with a fence of at least 2 m covered with mash nett to contain dust. Signage must be displayed in all four corners of the site to prevent unauthorized entry by members of the public and vehicles.

CS1. 23 Ladders – GSR 13A

You are only to use ladders that are undamaged and are of sound construction.

Ladders must be placed on a register and inspected on a monthly basis by an appointed person.

Ladders are to be secured during use. If it is necessary to use a ladder before it can be secured, a second person must hold it steady at all times. Place the ladder's feet on a level base. (wooden blocks or bricks are not to be used).

Ladders are not to be used as scaffolds or work platforms.

When used as access to trenches and work areas, the ladder must extend one meter above the step off point and be placed at an angle where the base of the ladder is one quarter of the ladder height away from the base of the structure, and must be fitted with non-skid devices.

Ladders must not be used nearer than 3m to any exposed electrical power source and never in substations or on electrical installation work.

Ladders are not to be used in a horizontal position.

Maintain 3-point contact by keeping two hands and one foot or two feet and one hand on the ladder at all times.

Do not carry objects in your hands while on a ladder.

Ladders must be fitted with non-skid devices at the bottom ends and hooks or similar devices at the upper ends.

Ladders with damaged stiles, or damaged or missing runs should never be used.

Ladders must never be fastened together to increase the reach.

Wooden ladders must never be painted.

CS1. 24 Bulk mixing/Concrete Mixers – CR 20

The Contractor shall ensure that all concrete mixers are operated and supervised by a

competent person who has been appointed in writing.
The Contractor shall ensure that all devices to start and stop the concrete mixers are provided and that these devices are:

1. Placed in an easily accessible position; and
2. Constructed in such a manner to prevent accidental starting

All dangerous moving parts of a mixer must be placed beyond the reach of persons by means of covers.
No person shall be permitted to remove or modify any guard or safety component unless authorized to do so by the appointed person
A Contractor shall ensure that all persons authorized to operate the concrete mixers are fully:

1. Aware of all dangers involved in the operation thereof
2. conversant with the precautionary measures to be taken in the interest of health and safety

No person supervising or operating a concrete mixer shall authorize any other person to operate the plant, unless such a person is competent to operate such machinery.
In case the concrete is supplied by the an external service provider PC shall ensure that there are fully inducted and compliant with the provisions of the OHS act and its regulation. Furthermore, PC's employees shall not be allowed to operate the ready mix truck chutter in any circumstances

CS1. 25 Scaffolding – CR 16

All scaffolding must be in compliance to SANS 10085.
A competent person shall be appointed in writing to supervise the erection of all scaffolding operations. The Scaffolding erecter shall have the required accredited qualifications for scaffold erecting.
A competent scaffold inspector shall be appointed in writing to inspect the erected scaffolds and shall not be the same person as the erector.
An Inspection Register on scaffolding shall be kept in the Health and Safety File.
A copy of SANS 10085 as amended shall be available on site and kept in the Health and Safety File.

CS1. 26 House Keeping and Construction Sites – CR 27

The Contractor shall at all-time carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions, which contribute to the risk of injury to persons or damage to property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.

During the period of this Contract, the Contractor shall be responsible for the safe storage of all materials and equipment required for execution of the Contract, and for disposal of all non-usable waste material in an orderly manner.
All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.
Any flammable material, such as paint, diesel fuel and oil, shall be stored in lockable non-combustible structures, which shall be clearly marked to indicate the hazardous nature of the materials stored within. The flammable materials store shall be located in safe areas away from hazardous surroundings and adequate and suitable fire-fighting equipment shall be provided within easy reach of the materials stores.
Loose material need for use shall not accumulate so as to obstruct means of access to and egress from the workplace.
Scrap and waste shall not be allowed on site and must be removed daily.
The construction sites adjacent to build up area or public way shall be effectively fenced and controlled with access points.
HCS stored on site shall be stored in containers located in a dedicated area. The area shall be surrounded by a band wall.

CS1. 27 Stacking and Storage on Construction Sites – CR 28

A competent person shall be appointed in writing with the duty of supervising all stacking and storage of material on site.
Adequate storage areas shall be provided which includes demarcated areas.
All storage areas shall be kept neat and under control.

CS1. 28 Fall Protection – CR 10

A contractor shall cause-

a) The designation of a competent person, responsible for the preparation of a fall protection plan;
b) The fall protection plan contemplated in paragraph (a) to be implemented, amended where and when necessary and maintained as required;
c) Steps to be taken in order to ensure the continued adherence to the fall protection plan.

The fall protection plan contemplated in sub-regulation (1), shall include-

a) Scope
b) A risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location;
c) Fall prevention outlook: Fall elimination, fall prevention, fall arrest equipment
d) Emergency response and fall rescue plan
e) Appointments and training need analysis
f) Site activities/conditions e.g. open holes, excavations, ladders, scaffolds, lifting equipment etc.
h) Monitoring and review
I) Medical surveillance procedure
j) Accident/incident reporting, investigation and record keeping
k) Approvals and reviews
l) fall protection training register

NOTE:
The wearing of an approved type of safety harness fitted with a shock absorber and correctly secured to any approved anchorage is compulsory for personnel working at heights.
Safety harnesses must be worn where a leaning bar cannot be installed, where handrails are not available, in instances where there is a risk of injury due to falling, and generally whenever work is undertaken at a height of more than "a person's height".
It is the contractor's responsibility to train his employees on the correct use of harnesses.
Safety belts may only be used as a fall restraint and not as a fall protection device.
On windy/rain days, special precautions are to be taken when working at.
No workers are to be allowed to work at height during inclement weather

CS1. 29 Structures – CR 11

1. A contractor shall ensure that:
   a) all reasonable practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work: and
   b) No structure or part of a structure is loaded in a manner which would render it unsafe.
2. A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.
3. Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.
4. Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

CS1.30 Temporary Works – CR 12

A competent person shall be appointed in writing to supervise all formwork and support work.
The name and address of such a person shall be included in the Health and Safety Plan of the Principal Contractor.
The contractor must ensure that all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be able to support all anticipated loads.
All drawings pertaining to formwork and support work must be kept on site and available for inspection by an inspector, contractor, client, client's agent or employee.
All formwork and support work must be inspected and checked for suitability by a competent person under the following conditions:

1. Before use
2. During placement of concrete or any other imposed load
3. After placement of concrete or any other imposed load
4. On a daily basis after placement of concrete until the structure is removed.
5. Ensure that concrete gains sufficient strength before the support work is removed.

Record must be kept of these inspections.
Weakened formwork or support work must be immediately reinforced.
Persons must be prevented from slipping on support work.
Persons must not be affected by the use of solvents or any other similar substances.
Safe access must be provided for all support work.
Employees involved must be adequately trained and instructed to perform the work in a safe manner.
Foundations of formwork must be adequate to sustain the applied load.

C1.31 Material Hoisting – CR 19

A contractor must ensure that every material hoist and its tower have been constructed in accordance with the generally accepted technical standards and are strong enough and free from defects.
A contractor must ensure that the tower of every material hoist is

- erected on firm foundations and secured to the structure or braced by steel wire guy ropes, and extends to a distance above the highest landing to allow a clear and unobstructed space of at least 900 mm for over travel;
- enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material hoist, with walls or other effective means to a height of at least 2100 mm from the ground or floor level; and
- Provided with a door or *gate* at least 2100mm in height at each landing, and that door or gate must be kept closed except when the platform is at rest at such a landing.

A contractor must cause-

- the platform of every material hoist to be designed in a manner that it safely contains the loads being conveyed and that the combined mass of the platform and the load does not exceed the designed lifting capacity of the hoist;
- the hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist; and
- Every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when power is not being supplied to the hoisting machinery.

No contractor may require or permit barrows or material to be conveyed on the platform of a material hoist and no person may so convey barrows or material unless those articles are secured or contained in a manner that displacement thereof cannot take place during movement.
A contractor must cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material host, to be affixed around the base of the tower and at each landing.

A contractor of a material hoist may not require or permit any person to operate unless a hoist, person is competent in the operation of that hoist. .
No contractor may require or permit any person to ride on a material hoist. A contractor must ensure that every material hoist-

- is inspected on daily basis by a competent person appointed in writing by the contractor and such competent person must have the experience pertaining to the erection and maintenance of material hoists or similar machinery;
- inspection contemplated above, includes the determination of the serviceability of the entire material hoist, including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices;
- inspection results are entered and signed in a record book by a competent person, which book must be kept on the premises for that purpose;
- Is properly maintained and the maintenance records in this regard are kept on site.

CS1. 32 CRANES - CR 22

Where tower cranes are used:

- PC shall ensure that they are designed and erected under the supervision of a competent person
- All relevant risk assessments and method statements are developed and applied
- account must be taken of the effects of wind force on the crane and a wind speed device is fitted that provides the operator with a audible warning when the wind speed exceeds the design engineer's specification;
- account must be taken of the bearing capacity of the ground on which the tower crane is to be erected;
- the bases for the tower crane and tracks for rail mounted tower crane must be firm and level and secured;
- shall be erected at a safe distance from excavations;
- clear space must be provided and maintained for erection, operation, maintenance and dismantling;
- Tower crane operators must be competent to carry out the work safely;
- Tower crane operators must be in possession of a valid medical certificate testifying that the holder is physically and psychologically fit.

A competent person shall plan all lifting operations where the lift will exceed 2000 kg and the plan submitted to the Client for approval and permission to carry out the lift.

CS1.33 Temporal Electrical Installations on Construction Site office – CR 24

Electrical installations shall be carried out by a competent installer in possession of **registration certificate** issued by the Dept. of labour.
COC's shall be issued on completion of electrical installations in site offices
Before construction commences or any other related works and during the progress thereof adequate steps must be taken to establish the presence of and guard against any danger to the workers in respect to electrical cables or apparatus.
Any temporary electrical installation set up by the principal contractor or contractor must be inspected at least once a week by a competent person. The inspections shall be recorded in a register and kept in the Health and Safety File.
When working on or next to live electrical Machinery the Principal Contractor or Contractor must provide insulated stands, trestles and mats.
When Distribution Boards are removed the incoming power supplies shall be cut by the client's authorized Electrician. The incomer electricity supply feeder shall be earthed by a suitable earth wire or spike to prevent cable of becoming live during the installation of new Distribution Boards.
A register shall be kept on site in which all daily checks of portable electric tools are performed and signed by the responsible person. Checks shall include condition of plug top, power cord, on-off switch and insulation condition of electric tool. All tools shall be numbered and entered accordingly into the register. Condition of tools as listed in the register shall be inspected and signed by the construction supervisor at regular intervals as required by the nature of the equipment.

CS1. 34 First Aid - GSR 3

- **Safety Notice Board**

The Contractor shall provide a Safety Notice Board where safety notices, site regulations concerning safe working practices and information on the location of the nearest first aid station, can be conspicuously displayed to all staff. The size of the notice board shall be at least 600 mm x 800 mm.

- **First Aid Equipment**

The Contractor shall provide for its employees a stretcher for emergencies and an approved first aid box. The first aid box shall be checked monthly by a responsible person, who shall be appointed by the Contractor, and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor.

- **Hazard Notices**

The Contractor shall display hazard notices in all areas where hazardous conditions prevail or may occur.

- **Reporting of Incidents and/or Injuries**

All incidents in respect of damage to Works, property or machinery, or injury to persons, shall be reported by the Contractor's SHE Rep by the quickest means possible.
A mandatory incident report form, containing full details of the incident, shall be completed and submitted to the Site Agent within twenty four (24) hours of the occurrence of the incident.

CS1. 35 Fire Precautions on Construction Sites – CR 29

A register shall be kept on all Acetylene and Oxygen cylinders used on the site.
Condition of components, sub-components and safety components (e.g. Flame back arrestors) shall be listed in the register and signed by the construction supervisor at regular intervals as required with time and date stamp.
Acetylene, Oxygen and LP Gas cylinders shall be stored in suitable places to minimize the risk of fire.
Suitable storage to be provided for flammable liquids, e.g. petrol, diesel, paraffin.
Smoking shall be prohibited in the workplace and notices posted accordingly.
Suitable and sufficient firefighting equipment shall be placed in strategic positions in the work place.

(On vehicles and other positions as deemed necessary).

A register shall be kept on type and number of equipment for each site in the Health and Safety File.
A competent person shall inspect all firefighting equipment.
A sufficient number of employees shall be trained in the use of firefighting equipment.
A register shall be kept in the Health and Safety File on site with names of employees and type of firefighting training completed with date.
Suitable signs shall be erected in work places indicating escape routes.
Escape routes shall be kept clear. Evacuation plans shall be in Health and Safety File as part of Induction Training.
Combustible materials shall not accumulate on site.

CS1. 36 Construction Welfare Facilities – CR 30

PC shall provide clean drinking water for its workers
On each site where existing facilities are not present, at least one sanitary facility shall be erected for every 30 workers, a changing facility for each sex and sheltered eating areas.
Separate toilets shall be erected for each sex.
Mobile toilets with bucket system shall be installed at the site.
Cleaning of buckets shall be arranged with an approved service provider approved by the municipality.
To be at least once every week and disposal certificate shall be kept in the file.

CS1. 37 Portable electrical tools & equipment - EMR 9

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 amp. plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition, electrical appliances such as fridges, hotplates, heaters, etc. shall be inspected and maintained to the same standards as portable electrical tools and appliances. The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorized persons are allowed to use portable electrical tools and equipment;
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

PORTABLE ELECTRICAL TOOLS shall be maintained in good condition at all times to prevent an electrical shock to the user. The main source shall incorporate an earth leakage protection device. All equipment shall be fitted with a switch to allow for safe & easy starting and stopping.

CS1. 38 Use & storage of flammables & HCS - CR 25

The Principal Contractor / Contractor to ensure that:

- No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions are taken;
- The workplace is effectively ventilated. Where this cannot be achieved:
    - Employees must wear suitable respiratory equipment
    - No smoking or other sources of ignition is allowed in the area
    - The area is conspicuously demarcated as "flammable"
- Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place and sufficient fire-fighting equipment installed and fire prevention methods practiced e.g. proper housekeeping;
- Flammables stored in a permanent flammables store are stored so that no fire or explosion is caused i.e.:
    - stored in a locked well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as "Flammable Store – No Smoking or Naked Lights";
    - the flammables store to be constructed of two-hour fire retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall;
    - Adequate and suitable fire-fighting equipment installed around the flammables store and marked with the prescribed signs;
    - All electrical switches and fittings to be of a flameproof design;
    - Any work done with tools in a flammables store or work areas to be of a non-sparking nature;
    - No Class A combustibles such as paper, cardboard, wood, plastic, straw etc. to be stored together with Flammables;
    - The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored;
    - A sign indicating the capacity of the store to be displayed on the door;

- Containers (including empty containers) to be kept closed to prevent fumes/vapors from escaping and accumulating in low lying areas;
- Metal containers to be bonded to earth whilst decanting to prevent build-up of static;
- Welding and other flammable gases to be stored segregated as to type of gas and empty and full cylinders.

Hazardous Chemicals and Materials

a) The Contractor shall provide suitable and adequate protective equipment when work in an area where hazardous chemicals and materials are being used.
b) The Contractor shall ensure that its employees have familiarised themselves with the hazardous material data sheets applicable to the specific site as well as the location of firefighting equipment, safety showers/baths and other washing facilities, prior to commencement of work
c) Hazardous chemical substances shall be stored in a well ventilated area.
d) Spillage procedures shall be developed and spill kits shall be provided.
e) All HCS containers shall be labelled
f) Where HCS are stored PC to ensure that there are serviced fire extinguisher in close proximity

CS1. 39 Public H & S

The Contractor shall ensure that each person working on or visiting a site, and the surrounding community, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimize those dangers. Appropriate health and safety signage shall be posted at all times.

CS1. 40 Night work

The Contractor shall not undertake any night work without prior arrangement and a written permit from the Client. The Contractor shall ensure that adequate lighting is provided for all night work and failure to do so shall result in' work being stopped.

CS1. 41 Environmental Conditions

The Contractor must be mindful of adverse weather conditions upon the health and safety of the workforce. This includes inclement weather, strong wind, heat stress, extreme cold, etc. The Contractor's risk assessment process must take into account the risks associated with such weather conditions. The same is true when working in an environment where there is a risk to employees' health and safety from presence of poisonous flora, or wildlife (including bees, snakes, etc.). The Contractor’s risk assessment process must take these risks into account.

Furthermore, the Contractor shall ensure that the environmental specification is adhered to at all times.

CS1. 42 Occupational Health

Exposure of workers to occupational health hazards and risks are very common in any work environment, especially in construction. Occupational health hazards and risks exposure is a major problem and all Contractors are to ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards and risks. The occupational hazards and risks may enter the body in four ways:
- Inhalation through breathing e.g. cements dust;
- Ingestion through swallowing maybe through food intake;
- Absorption through the skin (pores) e.g. hazardous chemicals.

The contractor is required to ensure that all his personnel are medically fit prior to being allowed onto the work site. All Contractors should ensure that Occupational Hygiene surveys are conducted as per the Occupational Health and Safety Act to ensure employees are not exposed to hazards. Risk Assessments should identify areas where survey has been conducted.

- Noise induced hearing loss

Where noise is identified as a hazard the requirements of the NIHL regulations must be complied with and the following must be included / referred to in the Health and Safety Plan:

- Proof of training with regards to these regulations.
- Risk assessment done within 1 month of commencement of work,
- That monitoring carried out by an AIA and done according to SANS 083.
- Medical surveillance programme established and maintained for the necessary employees.
- Control of noise by referring to:
- Engineering methods considered
- Admin control (number of employees exposed) considered
- Personal protective equipment considered/decided on
- Describe how records are going to be kept for 40 years.

CS1. 43 Commissioning and Safety Precautions

The Contractor shall ensure that wherever repairs, adjustments or any other work are undertaken on any plant or machinery, the power supply is switched off, disconnected or the plant / machinery disengaged until the work or repairs have been completed.

CS1. 44 Monitoring and Review: Registers Required on Site

PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

- Personal Protective Clothing and Equipment issued, PPE condition Monthly checklist

MACHINERY

- Daily Checklist - Compaction Machinery
- Daily Checklist – Concrete mixer
- Daily Checklist – Generator/pump
- Daily checklist (before and after use) – Troxler (If applicable)
- Daily Construction Vehicle Pre-ignition Checklist – Excavator (If applicable)
- Daily Construction Vehicle Pre-ignition Checklist – TLB
- Daily Construction Vehicle Pre-ignition Checklist – Truck
- Daily Construction Vehicle Pre-ignition Checklist – LDV
- Operators on Construction Vehicles and Mobile Plant Training and Fitness Register

EQUIPMENT

- Ladder Inspection Register
- Daily Stacking Inspection Register
- Daily Scaffold Inspection Register
- Daily Formwork Inspection Register

TOOLS

- Monthly Checklist on Hand Tools
- Monthly Checklist on Portable Electrical Equipment

GENERAL

- Monthly Environmental Checklist and Deviation
- Weekly Hygiene Facility Inspection Register – Mobile Ablutions and Eating areas
- Stacking & Storage inspection registers
- Housekeeping inspection registers

FIRE

- Fire Extinguishing Equipment Register
- Register of Trained Employees in Fire Fighting
- Fire Awareness Attendance Training Register

EMERGENCY

- First Aid Box and Equipment Checklist
- Register of Trained Employees in Basic First Aid

- First Aid Awareness Attendance Training Register
- Incident Register (Injury/ occupational disease record book (Recording and investigation of incidents)
- Motor Vehicle Accident Register

TRAINING

- Induction Training Attendance Registers
- Toolbox talks Training Attendance Registers
- Community Training Attendance Registers
- Fall protection plan training attendance register
- Risk assessment & Safe work procedure attendance register
- Emergency/evacuation Training attendance register

PERMITS

- Blasting
- Bulk fuel storage
- Lock-out Permits (Water and Electricity)
- Radiation equipment (troxler)

INSPECTIONS

- Daily Excavations Inspection Register with specific reference to barricading
- Safety officer internal audit - Monthly
- SHE Rep Inspection Register – Monthly checklist and deviations
- Minutes of Safety Committee Monthly meetings

CS1. 45 Safe Work Procedures Required in Health and Safety File

- Stacking of material
- Working with Portable electrical equipment
- Working with cement and concrete mixers
- Scaffolding activities
- Formwork activities
- Working at heights
- Working in inclement weather
- Excavating of trenches
- Steel fixing
- Use of Troxler
- Blasting
- Loading and transportation of material
- Transportation of workers
- Operation of construction vehicles
- Refuelling of Plant
- Use of hand tools
- Electrical installations
- Use of Ladders
- Public safety
- Ergonomics

CS1. 46 Written Training Course Material to be filed in Health and Safety File and presented

- Induction Training (Workplace awareness)
- Training of operators on Construction Vehicles and Mobile Plant
- First Aid Awareness
- Fire Fighting Awareness
- HIV/AIDS Training

- Toolbox talks on Hand Tools
- Toolbox talks on Stacking of material
- Toolbox talks on working at heights
- Toolbox talks on Maintaining Scaffolding
- Toolbox talks on Traffic management
- Toolbox talks on Driving company vehicles
- Toolbox talks on Working with cement and concrete mixers
- Toolbox talks on working with portable electrical equipment
- Toolbox talks on Excavating of trenches
- Toolbox talks on Machine Guarding
- Toolbox talks on Hand Tool Accidents
- Toolbox talks on Ten Commandments of Safety
- Toolbox talks on Fire prevention
- Toolbox talks on Ergonomics
- Toolbox talks on lifting materials by hand
- Toolbox talks on safe loading
- Toolbox talks on substance abuse
- Toolbox talks on public safety
- Toolbox talks on facilities and hygiene
- Toolbox talks on Environmental influences

CS1. 47 Emergency Equipment to be kept on site but not limited to:

First Aid Kits with splinters and the minimum required contents
Stretcher
Fire Extinguishers
Emergency Siren
Emergency contact details
Cell phone with airtime of at least R20

CS1. 48 Personal Protective Clothing

The Contractor shall provide the necessary personal protective clothing free of charge for its employees in hazardous areas, appropriate to the nature of the hazard. PPE must be maintained and kept in a good condition.
Proposed Personal Protective Equipment & Clothing required on this project but not limited to:

	TYPE	WHEN TO WEAR
1.	Hard Hats	When there is work carried above 2m from ground level or in deep excavations
2.	PVC Gloves	Working with cement, steel
3.	Reflective clothing	Working adjacent to public roads or in close proximity to construction vehicles
4.	Safety Goggles	Grinding, Cutting Cement, mixing cement
5.	Gumboots	Working in water, concrete casting
6.	Safety shoes	Offloading, working with heavy loads, positioning of materials etc.
7.	Dust Masks	Working with HCS, windy conditions, cement
8.	Ear protection	Grinding, compaction etc.
9.	Safety harness	Working at heights
10.	Life-line	Working at heights
11.	Kidney belts	Plant operators

CS1. 49 Sub-Contractor Management Contractor control

PRINCIPAL CONTRACTOR shall enter into a Contractors Agreement in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993, with all appointed contractors.

PRINCIPAL CONTRACTOR shall take reasonable steps as are necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.

This would include the following:

- to appoint each contractor contemplated in writing for the part of the project on a construction site;
- ensure that contractors comply to the directives of the PRINCIPAL CONTRACTOR health and safety plan;
- to stop any contractor from executing construction work, which is not in accordance with the health and safety plan, and or the clients health and safety specification;
- to ensure that where changes are brought about to the design and construction, sufficient health and safety information and appropriate resources are made available to the contractor to execute the work safely;
- to ensure that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site;
- to ensure that potential sub-contractors have made provision for the cost of health and safety measures during the construction process;
- ensure that a comprehensive and updated list of all the contractors accountable to PRINCIPAL CONTRACTOR is maintained and that the section 37.2 agreements between the parties and the type of work being done are included and available;
- Ensure that the contractors to be used have the necessary competencies and resources to perform the construction work safely;
- Ensure that all other contractors are warned of hazardous or potentially hazardous situations, which may prevent them from effectively performing their duties, which includes the placement of adequate warning signs.
- As far as reasonably practicable, PRINCIPAL CONTRACTOR is to audit contractors at least once for the duration that the contractors are on site. Should the contractor be on site for longer than a month, then the audit must be conducted at least once every month.

CS1. 50 Medical surveillance procedures

All employees:
- Working at heights,
- Operators of plant/machinery,
- Exposed to noise,
- Exposed to cement and dust,
- General labour,
- Handling Hazardous Chemicals

Are to undergo pre-employment and exit medical assessments performed by a registered occupational medical practitioner.

CS1. 51 Incident reporting

Reporting of accidents and incidents - OHSACT, Sec. 24 & GAR 8

The Principal Contractor shall report all reportable incidents to the Dept. of Labour (in terms of the Act and Regulations) and shall provide the Client with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Principal Contractor shall provide the Client with copies of all internal and external accident / incident investigation reports including the reports contemplated above and below within 7 days of the incident occurring.

CS1. 52 ACCIDENT AND INCIDENT INVESTIGATION - GAR 9

The Principal Contractor / Contractor shall investigate all accidents / incidents where employees and non-employees were injured to the extent that he / she / they had to be referred for medical WASTEWATER TREATMENT by a doctor, hospital or clinic and results recorded on file.
The Principal Contractor / Contractor shall investigate all minor and non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keep a record of the results of such investigations including the steps taken to prevent similar incidents in future.
The Principal Contractor / Contractor shall investigate all road traffic accidents and keep a record of the results of such investigations including the steps taken to prevent similar accidents in future.
The Client reserves the right to hold its own Investigation into any incident or call for an independent external investigation.

CS1. 53 Emergency preparedness, Contingency planning & response

The Principal Contractor / Contractor shall appoint a competent person to act as Emergency Controller/Coordinator.
The Principal Contractor / Contractor shall conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she shall then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place.
The Principal Contractor / Contractor shall hold regular practice drills of contingency plans and emergency procedures to test them and familiarize employees with them **(every 3 months).**

CS1. 54 Security and access control

The Principal Contractor / Contractor shall establish site access rules, implement and maintain these throughout the construction period. Access control procedure shall ensure that non-employees do not proceed on to work areas unaccompanied by a senior site responsible person or other.
Construction site shall be adequately hoarded (fenced) with temporary gate manned to prevent unauthorised access. Warning signage shall be displayed on all four sides of the construction site

CS1. 55 Public Safety

The Principal Contractor / Contractor shall be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimize these dangers. This includes:

- Non- employees entering the site for whatever reason;
- The surrounding community;
- Passers-by.

Appropriate signage shall be posted to this effect and all employees on site shall be instructed on ensuring that non-employees are protected at all times.
All non-employees entering the site shall receive induction into the hazards and risks and the control measures for these.
All unattended excavations are to be backfilled, if not possible, they are to be adequately barricaded with PVC orange net of at least 1.2m high (NO DANGER TAPE)

CS1. 56 Audit, Reporting & Corrective actions

Monthly audit by the Client SHE agent

Occupational Health and Safety Audits will be conducted monthly to comply with Construction Regulation 4(1) (*d*) to ensure that the Principal Contractor / Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

Contractor's audits and inspections

The Principal Contractor / Contractor shall conduct monthly internal audits to verify compliance with his own occupational health and safety management systems and procedures.

CS1. 57 Consultation, Communication and Liaison

All occupational health and safety liaison between the Client, the Principal Contractor, other Contractors, the Designer and other concerned parties shall be through the OH&S committee.
In addition to the above, communication may be directly to the Client or his appointed Agent, in writing, as and when the need arises.
Consultation with the workforce on OH&S matters shall be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.
The Principal Contractor / Contractor shall be responsible for the dissemination of all relevant OH&S information to other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her Agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

CS1. 58 Record keeping

The Contractor shall keep and maintain Health and Safety records to demonstrate compliance with the Health and Safety Specification and the Occupational Health and Safety Act. The contractor shall ensure that all records of incidents, spot fines, training etc. are kept on site. All documents shall be available for inspection by the Client, or the Department of Labour's Inspectors.

CS1. 59 Close-out

Upon completion of the Works (at zero man hours), the Contractor shall hand over a consolidated Health and Safety file (Hard & Soft copy) to the Client SHE agent.

Health and Safety close out SHE file requirements include:

a) Client H&S Specification
b) Principal Contractor's OHS Plan(s)
c) Organograms
d) Legal Appointments
e) Notification to Department of Labour of commencement of work
f) Letters of Good Standing for the Project
g) Full files for all Contractors as well as their close out reports
- List of Contractors
- Letters of Approval of Contractors
- Mandatory Agreements
- Letters of Good Standing
- Appointments

h) Incident Records
i) Non- Conformance records
j) Agent's Audits
k) Method Statements
l) Risk assessments
m) Safe work procedures
n) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended.
o) All drawings for temporary structures (suspended beams/scaffolds etc.)
p) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)

CS1. 60 Penalty Enforcement

Penalties may be imposed on Contractors who do not comply with this health and safety Specification.

The list of offences that attract penalties and how much it would cost per offence is listed on the below table and such fines will be deducted from the contractor's payment certificate.
Note: In the event whereby the contractor has completed construction work and there are still outstanding critical non-conformances, the Employer reserves the right not to release an amount of not less than 5% of the final payment certificate or retention amount.

LIST OF OFFENCES AND PENALTIES

NON-CONFORMANCES	**FIRST TRANSGRESSION**	**SECOND TRANSGRESSION**
1. Expired Letter of good standing	Written warning	R 5000 or Site closure
2. Notification of Construction work	Written warning	R 500
3. Mandatory agreement	Written warning	R 500
4. Accident/incident management	Written warning	R 2000 – R 10000/Site closure
5. Pollution	Written warning	R 500 – R 5000
6. Inspections	Written warning	R 50 per item
7. Appointments & Competence	Written warning	R 50 per appointment
8. Risk assessment & safe work procedure	Written warning	R 200 per activity
9. Training (induction, toolbox talks etc.)	Written warning	R 50 per employee
10. PPE	Written warning	R 50 per employee
11. Unsafely working at heights	Written warning/Halt activity	R 500 – R 5000
12. Pre-employment Medicals	Written warning	R 100 per employee
13. Faulty/sub-standard tool	Written warning	R 50 per tool
14. Unsafe use & storage of Troxler	**Site closure**	**Site closure + minimum of R10 000**
15. Blasting (permits/notification)	**Halt operation**	**Minimum of R5 000**
16. Exit medicals	Written warning	R 250 per employee
16. File consolidation/ close out report	Written warning	5% of retention

PE ENVIRONMENTAL MANAGEMENT SPECIFICATION

PE1 ENVIRONMENTAL SPECIFICATION

PE1.1 General

The Environmental Specification augments the Construction Specification, drawing the Contractor's attention to how he should regulate his construction activities so as to have the minimum impact on the environment.

Contractor must comply with other legislation including, but not limited to:-

- National Water Act
- Atmospheric Pollution Prevention Act
- Environmental Conservation Act
- National Environmental Management Act
- Minerals Act

PE1.2 Responsibilities of the Contactor

The Contractor shall be required to submit a detailed Method Statement, outlining how the construction activities will comply with the prescribed procedures of this specification to the Engineer of his representative for approval.

Specific responsibilities of the Contractor include:

(a) Identifying procedures applicable to the activities he controls.
(b) Complying Method Statements to meet the procedures and targets.
(c) Submitting Method Statements for approval.
(d) Devising a system for monitoring compliance with Method Statements and procedures.
(e) Identifying environmental training needs and implementing the environmental awareness training programme of the employees.
(f) Implementing corrective and preventative actions recommended by the Engineer or his representative.
(g) Review of Environmental Management Plan implementation and effectiveness at monthly site meetings (with the Engineer).
(h) Ensuring monthly audits of the Environmental Management Plan, undertaken by the Environmental Controller, who shall be a skilled employee of the Contractor.

Should the Engineer be of the opinion that the Environmental Management Plan and the conditions of the Method Statement are not being adhered to and the appropriate corrective action is not being implemented, the Engineer shall be at liberty to instruct to the Contactor to cease the related operations until the Contractor complies with the relevant requirements. The Contractor shall not be entitled to any extension of time for such stoppages. In addition, the Engineer may impose a fine, as set out in these specifications.

PE1.3 Method Statements

The Contractor shall be required to submit Method Statements to the Engineer outlining proposed construction activities, phasing and procedures and methods to comply with the targets stipulated in the Environmental Management Plan. Method Statements shall, where applicable, include Site Establishment Drawings with sufficient detail to assess the potential impact of the site facilities or to assess the degree of safeguarding provided against pollution.

Method Statements shall indicate how the procedures will be applied in order to meet the relevant targets and are central to the proper implementation of the Environmental Management Plan.

Method Statements must be submitted at least 10 days prior to the proposed commencement of related activities and must be approved by the Engineer or his representative.

Method Statements shall be required for the following activities, or any other Method Statement required by the Engineer:

- Layout and preparation of construction camp.
- Sanitation facilities for camp and site activities.
- Concrete batching and mixing.
- Contaminated Water Management Plan from workshop and other similar areas.
- Emergency spillage procedures.
- Solid waste control and removal from site.
- Emergency procedures for fire.
- For each construction activity:-
    - Planned topsoil management
    - Borrow materials and spoil management including source and spoil areas.
    - Stormwater management.

PE1.4 Site Camp

Site camps shall not be located within 100 m of a water course and out of a significant stormwater drainage area. The site shall be demarcated by a temporary fence and shall be divided into separate administrative, storage and workshop areas. Housing shall be separate or adjacent.

When campsites are located on virgin soil, topsoil shall be removed and replaced at the end of the project.

PE1.5 Sanitation

Separate ablution facilities for male and female shall be provided at the site camp and within 200m of any workplace. In the field, fresh drinking water shall be available at the toilet. Toilet facilities for the Engineer shall be separate, as specified. Toilets shall be cleaned and emptied on a regular basis.

PE1.6 Fuel (petrol and diesel) and Oil

Fuel may be stored on site and the fuel storage area shall be located at the workshop or a fuel storage depot located within the construction camp. The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are kept firmly shut or in bowsers. The tanks / bowsers shall be situated on a smooth impermeable surface (plastic or concrete) base with an earth bund (plastic must have sand on top to prevent damage and perishing). The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% of the total capacity of all the storage tanks / bowsers. The bunded area shall be covered. The Contractor shall prevent unauthorized access into the fuel storage area.

No smoking shall be allowed within the vicinity of the fuel storage area. The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores.

Gas and fuels shall not be stored in the same storage area.

PE1.7 Solid Waste Management

No on site burying or dumping of any waste materials, vegetation, litter or refuse shall occur.

The Contractor shall provide sufficient bins with lids on site to store the solid waste produced on a daily basis. Bins shall not be allowed to become overfull and shall be emptied a minimum of once daily. The waste may be temporarily stored on site in a central waste area that is weatherproof and scavenger-proof, and which the Engineer has approved. No burning of refuse is permitted.

All solid waste shall be disposed of off-site at least once weekly at an approved landfill site. The Contractor shall supply the Engineer with a certificate of disposal.

PE1.8 Protection of Flora, Fauna, Natural Features and Archaeological Material

Natural features, indigenous flora and fauna in the vicinity of the project works should be protected and damage or disturbance prevented or minimized: specifically:

- No plant species may be removed unless agreed by the Engineer or unless they are listed as exotic, invasive species.
- No construction staff may have access to indigenous vegetation outside of the working corridor.
- The use of indigenous plants as firewood is prohibited.
- Where protected or Red Data Species are encountered and require removal, the Engineer should be consulted and the plant(s) then replanted in a nearby "safe" are of similar habitat. Permission should be obtained from the Department of Economic Affairs, Environment and Tourism, Eastern Cape.
- All fauna (including domestic livestock) within and surrounding the site shall be protected; they shall not be caught, poisoned, trapped, snared or killed.
- No domestic animals shall be brought onto the site.
- In the event of graves of fossils being uncovered, works should cease in the vicinity and the Engineer contacted.

PE1.9 Conservation and Stockpiling of Topsoil

Topsoil shall be removed from temporary and permanent construction areas, no longer than 10 days before construction begins.

Topsoil depth shall be 100 mm or as separately specified. Topsoil removed shall be separately stored for later re-use. Topsoil from trench excavation shall be separately placed along the trench for later return to the top of the backfill and shall be finished to natural ground level plus 75 mm and shall only be lightly compacted.

On steep gradients (greater than 15 %), additional iron berms shall be constructed as per detail. These shall be constructed immediately following the construction of backfill.

PE1.10 Erosion Control

Soil erosion shall not be tolerated on the site. Uncontrolled erosion will cause siltation and pollution of the streams and result in loss of valuable topsoil. The Contractor should take all reasonable measures to prevent soil erosion and protect areas susceptible to erosion. Erosion prevention measures must be implemented to the satisfaction of the Engineer.

Soil erosion may result from a diversion, a restriction, or an increase in the flow of stormwater or river flow caused by the presence of temporary / permanent works, operations and activities. Where evidence of erosion appears, the construction of contour berms, cut-off drains or planting of grass sods / ground cover may be necessary.

Where erosion does occur, the Contractor shall reinstate such areas and areas damaged by the erosion at his own cost and to the satisfaction of the Engineer. Topsoil that has been washed away shall be replaced.

The Contractor shall take reasonable measures to control the erosive effects of stormwater runoff.

PE1.11 Prevention of Pollution

The Contractor should ensure that pollution of the soil or water (i.e. surface and ground) does not occur as a result of any activities on site. Pollution could result from the release, accidental or otherwise, of chemicals, oils, fuels, sewage, wastewater containing kitchen waste, detergents, solid wasted and litter, etc.

PE1.12 Dust Control

Dust is regarded as a nuisance when it reduces visibility, soils private property, reduces the palatability of grazing grasses and may retard plant growth. It is also aesthetically displeasing.

The Contractor shall be responsible for the control of dust arising from his operations and activities. Control measures could include regular spraying of working / bare areas with water, at an application rate that will not result in soil erosion or runoff.

PE1.13 Noise Control

The Contractor shall limit levels (e.g. install and maintain silencers on machinery). The Contractor's attention is drawn to the applicable regulations framed under the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983).

PE1.14 Traffic Control

Increased traffic, especially heavy vehicle traffic, has the potential to draw complaints from nearby residents. The Contractor is expected to address any complaints received.

The Contractor shall comply with all the applicable local, regional and national by-laws with regard to road ordinances, such as speed limits, roadworthiness, load securing / covering.

Where sections of the road are closed for construction, barricades shall be constructed to prevent unauthorized access at all times. Suitable signage should be erected informing drivers of the road closure and warning of the possible dangers involved in trespassing within the closed areas.

Where the road is to be closed for an extended period of time for the purpose of blasting, communities and motorists must be given suitable prior warning through signposting, media notices, etc. The safety of motorists should remain paramount at all times.

The Contractor shall keep the local Traffic Control department (Traffic Police) aware of road closure and other activities that will affect traffic flow.

PE1.15 Fire Prevention and Control

The Contractor shall take all the necessary precautions to ensure that fires are not started as a consequence of his activities on site. The Contractor, sub-contractors and all employees are expected to be conscious of fire risks. The Contractor shall hold fire prevention talks with his staff to create an awareness of the risks of fire. Regular reminders to his staff on this issue are required.

No fires may be made other than for the purpose of cooking, and must be extinguished with water once they have served their purpose. Cooking fires shall be contained in a fire drum, in an area approved by the Engineer.

The Contractor shall ensure that there is adequate fir-fighting equipment (i.e. fire extinguishers and fire beaters) on sire and in all major working area.

The Contractor shall be liable for any expenses incurred by any organizations called to assist with fighting fires and for costs involved in rehabilitation of burnt area / property / persons, should the fire be the result of the Contractor's activities on site.

Removed plant material shall not be dumped across the fence-line or alone the fence-line onto private property. If an abutting land owner requests this, the Client must be indemnified.

PE1.16 Social Disruption

Where construction activities require the removal of fences from around private land, the occupants shall be warned at least three days in advance. These fences / boundary markers shall be reinstated as soon as construction is complete.

Care should be taken not to damage private property. No access to homesteads / farms or other such areas is permitted without permission of the resident and on agreement with the Engineer.

PE1.17 Protection of the Public

The Contractor shall be responsible for the protection of the public, and public property, from any dangers associated with the quarrying, crushing, stockpiling and associated activities, and for the safe and easy passage of pedestrians and traffic in area affected by project activities.

Any excavation material, spoil sites, the quarry opening and other obstructions or excavations shall be suitably barricaded and / or demarcated with hazard tape.

PE1.18 Vehicle and Access Roads

Site vehicles should be permitted access only within the demarcated construction sites or on existing roads, as would be required to complete their specific tasks. Vehicles are not permitted on re-vegetated areas.

Site vehicle traffic should be limited to specific access roads to prevent unnecessary damage to the natural environment.

Along trench excavation, access shall be contained within 6m of the trench and the area shall be rehabilitated by light scarifying and erosion control.

PE1.19 Stockpiling / Spoiling of Materials

The Engineer shall approve all stockpiling and spoiling sites and confirm the end-use or rehabilitation plans for these sites before work commences on any section of the work.

The stockpiles should be located within demarcated construction sites. Spoil material may be piled in area such as exhausted borrow pits / quarries. Material stockpiles should be done so in such a way as to minimize the spread of materials and the impact on the natural vegetation.

The Contractor, upon completion of the project shall reinstate areas used for stockpiling to their former states. Where exhausted borrow pits or dongas have been used for spoil materials they shall be landscaped to fit into the surrounding environment, in a secure / safe manner.

The Contractor shall ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the "no go" area at any time.

PE1.20 Community Relations

The Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the Engineer.

The Contractor shall keep a "Complaints Register" on site. The Register shall contain all contact details of the person who make the complaint, information regarding the complaint itself and measures taken to address the complaint.

PE1.21 Cement and Concrete Batching

The location of the batching plant (including the location of cement stores, sand and aggregate stockpiles) will be agreed by the Engineer. The concrete / cement batching plant shall be kept neat and clean at all times. No batching activities shall occur directly on the ground.

The area shall be bunded and sloped towards a sump to contain any spillages of substances.

Concrete shall not be mixed directly on the ground. All wastewater resulting from batching of concrete shall be disposed of via the wastewater management system and shall not be discharged into the environment.

Used bags shall be stored in weatherproof containers to prevent wind-blown cement dust and water contamination. Used bags shall be disposed of on a regular basis via the solid waste management system, and shall not be used for any other purpose.

Unused cement bags shall be stored so as not to be affected by rain or runoff events. In this regards, closed steel containers should be used for the storage of cement powder and any additives. The Contractor shall ensure that sand, aggregate, cement or additives used during the mixing process are contained and covered to prevent contamination of watercourses, the surrounding vegetation and natural rock through wind or water dispersion.

All runoff from the batching plant shall be strictly controlled, and cement-contaminated water shall be collected.

All visible remains of excess concrete shall be physically removed on completion of the plaster or concrete pour section and disposed of. Washing the remains into the ground is not acceptable. All excess aggregate shall also be removed and disposed of in an approved landfill site.

PE1.22 Temporary Deviations

Temporary vehicular deviations should be located so as to cause; minimal disruption to surrounding communities, minimal disturbance to flora, fauna and the surrounding landscapes and minimal risk of erosion. The deviations shall not impede normal pedestrian or vehicular access to adjoining villages and community lands.

Each deviation route should be rehabilitated as soon as practically possible, and preferably immediately once the construction on the adjoining section of road has been completed.

PE1.23 Blasting

All blasting is to be done in terms of the Minerals Act and the **Mine Health and Safety Act** (Act 29 of 1996).

The Contractor shall notify nearby residents in advance of any blasting. The Contractor is responsible for any accidental damages to persons or property as a result of blasting.

Existing cracks in nearby houses shall be noted.

PE1.24 Quarry and Borrow Pit Utilization

The following issues pertaining to borrow pits and quarry utilization require special attention:

- All topsoil shall be removed from the areas to be mined.
- Areas to be mined must be agreed with the Engineer in the Method Statement.
- Excavation should take place systematically and progressively so that areas that are worked out may be rehabilitated, while other areas are being mined.
- The borrow pit may be used as spoil sites for spoil materials, upon consent from the landowner and on approval from the Engineer. Where material is spoiled in the borrow pit, the material shall be shaped to fit into the surrounding landscape and covered with topsoil stored from prior stripping.
- No refuse material, WASTEWATER or construction litter may be dumped in the borrow pit or the quarry.

PE1.25 Site Rehabilitation

The Contractor shall be responsible for complete rehabilitation of the site, including quarry slopes, benches, floor, borrow pits, spoil sites, access roads, haul routes, site camp, stockpile, crusher area, ablution facilities and storage areas. The Contractor shall undertake full rehabilitation under no extra cost to the Client. The Contractor shall implement progressive rehabilitation: once works are complete in a particular area, rehabilitation / re-vegetation could begin. This would provide the opportunity to

assess whether or not the methods employed are suitable and successful and would help prevent erosion in impacted areas.

Where re-vegetation of an area is not successful, the Contractor will replant these areas at no additional cost to the Client.

The Contractor shall provide the Engineer with a comprehensive plan for rehabilitation of the entire site. This plan must meet the approval of the Engineer.

The following points must be taken into account when drawing up the Rehabilitation Plan:

- The Plan should be flexible – where measures are found to be inefficient, the plan shall be modified, at no additional cost to the Client.
- The Contractor shall be responsible for successful rehabilitation and re-vegetation of the site.
- The Plan shall include the eradication of young invasive, exotic species that may have become established during the construction period, in impacted areas and in rehabilitated areas.
- The Plan shall include grass seed mixes applicable to summer and winter.

PE1.26 Work Stoppage and Penalty

The Engineer shall have the right to order work to be stopped in the event of significant infringements of the Environmental Specifications, until the situation is rectified in compliance with the specifications. In this event, the Contractor shall not be entitled to claim for delays or incurred expenses. The requirements of this specification must be read in conjunction with and as an extension of the SANS 1200 requirements. Payment under various items will be withheld until the environmental requirements are met. Where this specification is ignored, in the sole opinion of the Engineer, a penalty of up to R5,000 per incident per month may be imposed by the Engineer.

PE1.27 Existing Services and Infrastructure

The Contractor shall ensure that existing services (road, rail, pipelines, power lines and telephone services) are not disrupted or damaged, unless required by the contract and with the permission of the Engineer.

PE1.28 Exotic Vegetation

Exotic invasive vegetation shall be removed from any working areas and the site camp(s). These vegetation species shall also be eradicated when they begin to establish themselves in disturbed areas (disturbances of the natural vegetation will encourage the establishment of invasive species). In order to discourage the spread of exotic species, soil should not be moved from one part of the site to another.

PE1.29 Open Trench Length

Unless agreed to in writing by the Engineer, not more that 750mm of trench per pipe laying team shall be open at any time. The operation shall include removal and replacement of topsoil, construction of erosion berms and the rehabilitation of borrow area, access roads, etc.
Openings for in-line valves etc. shall be kept to the minimum.
Open trenches shall be protected to prevent humans and stock from falling into the trenches.

PE1.30 Stream and River Crossings

The Engineer will select the crossing point and may issue specific drawings showing the extent of the works, failing which; crossings must be constructed in accordance with the standard plan. On completion, the top of the structure of protective works shall be level with the stream bed. Excavation work shall be confined to the minimum requirements of the structure. The Method Statement shall also address access points, gabion stone etc. required for the structures.

PE1.31 Environmental Awareness Training

Before any building work is commenced on the site, the Contractor's site management staff, including foremen, shall attend an environmental awareness training course, of approximately one-hour duration, presented by the Engineer of his representative.

PE1.32 Measurement and Payment

Basic Principles

Except as noted below as schedules items, no separate measurement and payment will be made to cover the costs of complying with the provisions of this specification and such costs shall be deemed to be covered by the rates bid for the items in the Schedule of Quantities completed by the Contractor when submitting his bid.

Topsoil removal and replacement and seeding etc. is measured work on the Bill and applies only to permanent works. The temporary works, work areas and borrow pits require that removal and replacement of topsoil and seeding is covered in the rates.

Maintenance of Environment Requirements ……Lump Sum

This pay items in the Time Related P & G section is to cover any costs not covered in the rates or under specifically listed items.

Remove alien plant from sites and pipe route …….. Lump Sum

Alien species which are established during construction are to be removed regularly and completely before the issue of the Certificate of Practical Completion.

C3.6 MECHANICAL

3.6.1 Pricing

The limits of the mechanical engineering scope of the works are to the outside of the steel fittings were converted to uPVC which includes the steel to uPVC adaptor on all mechanical installations. This includes all internal pipe work, valves pumps and fittings to specifications the specifications laid out below and in the bill of quantities.

The civil contractor is to construct the units allowing boxouts or recesses were required to the mechanical contractors' requirements. The onus is on the mechanical engineer to ensure pre inspection of such openings to ensure correctness prior to required installation date.

All pricing to include

All health and safety standards referred to as the SANS 10142-1 and government gazette requirements relating there to.
The preparation of and supply for approval of GA drawings.
Supply, manufacture, store and deliver to site.
Installation and Commission and up-hold the Hand Screen for 12 months retention period.
The Tenderer/Contractor to submit the technical data on the equipment.
The Tenderer/Contractor must include in his prices all O&M training on the supplied & installed equipment.
The Tenderer/Contractor must only price IE3 premium efficiency motors for the equipment.

Training
The training of clients proposed staff to meet the requirements of operator levels inclusive of recognized NQF level of certification for position of employment
The training of staff in O&M during the 12-month retention period on the special characteristics the supplied & installed equipment.

3.6.2 Mechanical Specifications

Iron and Steel Specifications
- All steel in contact or proximity to the water/wastewater to be stainless steel grade 304 inclusive of bolts washers and other fixings
- All peripheral steel to be pre-manufactured prior to being hot dipped galvanized to EN 10240:1999 and ISO 1461:1999 on coatings on fabricated iron and steel articles

Iron and Steel Pipe work
- All mild steel pipes shall be spirally, and butt welded
- For the design of pipe fittings and specials, care must be taken to allow adequate spacing for bolts, flange adaptors, anchor blocks, etc.
- All mild steel pipes and fittings/specials shall be designed, manufactured, tested and inspected in accordance with the latest issues and specifications of - SANS 719: Steel Grades A, B and C - SANS 1431: Steel Grades 300 WA and 350 WA - API 5L: Steel Grades X42, X46, X52, X56 and X60 - EN 10025-2: Steel Grade S355JR + AR (where specified for specials)
- All mild steel pipes and fittings shall be externally coated and internally lined, a two-component cross linked epoxy that complies with the requirements of SABS 1217. The Target Thickness of lining must be (minimum 500 µm and maximum thickness 800 µm). Maximum dry film thickness per coat of 125 µm to 250 µm must be achieved. The pipe material must be prepared as required in the epoxy manufacturer's specifications.
- Flexible couplings shall be manufactured from hot rolled asymmetric steel T sections with a profiled rolled steel sleeve and accommodated with an EPDM gasket. All bolts shall be of D cup head low carbon steel. All flexible couplings shall be fusion bonded powder coated.

- All flanges shall be manufactured from mild steel in accordance with SANS Table 1123 and finished to an acceptable machined finish. 1.1.5. Bolts and nuts for flanges / couplings All bolts and nuts shall be SANS 1700 Gr 8.8 mild steel or hot dipped galvanised to SANS 763.

3.6.3 Valves

Isolating valves
All valves shall be anticlockwise, LEFT-HAND closing. All sizes are nominal (DN) with a minimum working pressure rating of 16 bar (PN) which are suitable for dealing with a maximum working pressure of 1 600 kPa.

All gate valves shall be the RSV type (AVK, or similar approved, PN 16 minimum pressure, to SABS 664, cap top, non-rising spindle and anti-clockwise closing and shall be internally and externally epoxy-coated

Butterfly valves
Butterfly valves (Sal valve, Bermad, Gurnick Ainsworth should be considered in cases where the pipe diameter is greater than 300 mm, with approval from the engineer.

Butterfly valves shall be of the gearbox-operated system, flanged and drilled to SABS 1123.

Butterfly valves shall be of the worm gear operated system. The valve body shall be cast from SG 42 iron with integral shaft hubs and an operator mounting flange in stainless steel. The valve disc offset shall be of a single eccentric type with a highly efficient hydrofoil profile to maximize the open flow area and cast from the same material as the body. The valve seals shall be precision injection moulded from Nitrile rubber and fitted within the body perimeter. Valve bearings shall be of the low friction PTFE type where no lubrication will be needed. Manual gear operators shall be of quadrant worm reducers, keyed to the valve shaft and fitted with hand wheel or cap top positioning bolts for disc adjustment. Valves may be painted with a primer coat and a final enamel, but preferably fusion bond powder coated.

Pressure and Flow Control Valves
All PRV's and FCV's (Cal-Val, Bermad or similar approved and shall be properly designed and installed and housed in a reinforced concrete chamber.

3.6.4 Valves Material Standards

The typical reduction ratio of PRV's is ± 1:3. Systems that operates at higher pressures may require the PRV installations to be designed in a series configuration.

For ease of maintenance and repair, the use of smaller diameter PRV's is preferred. However, should 500 mm diameter PRV's be required, suitable lifting equipment must be provided.

FCV shall be hydraulically operated globe valves. The inner valve assembly shall be top and bottom guided by means of bearing bushings. The inner valve assembly shall be the only moving part and shall be securely mounted on an AISI 316 Stainless Steel stem. Lower grades of Stainless Steel shall not be acceptable. The Stainless-Steel stem shall be provided with wrench flats for ease of assembly and maintenance. Wrench flats will be fully accessible when inner valve is assembled.

All pressure containing components shall be constructed of ASTM A536-65 / 45 / 12 ductile iron. Valves shall be provided with smooth frictionless motion and maximum low flow stability with actuation being achieved by the use of Rolling Diaphragm technology. Qumbu WWTW (3 ML/day)

3.6.5 Plant Equipment Supply

Valves shall have a protective fusion bonded epoxy coating internally and externally to a minimum

of 250 microns. The protective fusion bonded epoxy coating shall conform to the ANSI / AWWA C116 / A21.16 (current version) specification.
No machining of any external parts after final coating will be acceptable to ensure a continuous coating surface throughout the entire valve.

The valve cover shall have a separate stem cap giving access to the stem for alignment check, spring installation and ease of assembly. Valve bonnets shall be accurately located to bodies utilizing locating pins. Locating pins shall eliminate corrosion resulting from the use of uncoated ductile iron to ductile iron surfaces. Valves with lipped spigot covers shall not be acceptable due to risk of rust and difficulty in assembly.

Valves shall have the AISI 316 Stainless Steel seat and shall incorporate a two-piece seat and bottom guide design. The valves shall form a drip-tight seal between the stationary stainless steel seat ring and the resilient disc, which has a rectangular cross-section and is retained by clamping on three- and one-half sides. The resilient disc shall be constructed of EPDM for normal service conditions.

All external fasteners shall be AISI 18-8 Stainless Steel with AISI 18-8 Stainless Steel washers. Mild steel studs or bolts will not be acceptable.

All repairs and maintenance shall be possible without removing the valve from the line. To facilitate easy removal and replacement of the inner valve assembly and to reduce unnecessary wear on the guide, the stem shall be vertical when the valve is mounted in a horizontal line.

Each valve shall be air tested prior to shipment. The standard test shall include leakage test, seat leakage test, and stroke test. The valves shall be covered by a minimum three years (3) warranty against defects in materials and workmanship. The stainless-steel seat shall be covered by a lifetime replacement warranty.

The auxiliary control system shall be fitted with a large filter assembly, to prevent fouling of the control system. This filter shall be fitted with a transparent drain cap, which allows maintenance personnel to inspect the strainer, without the need to shut of the system, or remove the strainer from service. The main valve body shall be fitted with a visual position indicator, to offer the maintenance personnel visual indication of the valve position, as well as opening and closing speed controls.

The strainer shall have an integral blowdown valve and discharge tube for facilitate the ease of maintenance.

Air Valves

All air valves shall be Vent-O-Mat type or similar approved.

1.1.7.4. Non-return / reflux / check valves NRV's / reflux valves / check valves may be swing check type with a PN 16 minimum pressure rating. The valves shall be suitable for either horizontal or vertical mounting with the angle of the door ensuring that closure starts at the point where forward flow declines.

The disk and hinge shall be fixed in the valve bonnet for easy access and maintenance. The body configuration shall be such that friction losses are minimized. The disc shall be fully encapsulated with rubber to prevent corrosion and ensures a drop tight shut-off, while the seat shall be hydraulically pressed into the body. The valve hinge shall be designed to adjust itself accurately to the plane of the seating under load.

Arm-weight type NRV's can also be considered if on prior approval by the consulting engineer.

Flow / water meters
All 300 mm diameter and above flow meters are to be electromagnetic flow meters and shall be Class 16, to be supplied, delivered, installed and commissioned.

The flow meter shall be of the electromagnetic type, utilizing pulsed DC excitation and shall be microprocessor based. It must be capable of measuring flow rate and flow total in both directions, with two independent totalizers to give flow for network management purposes. There shall be separate isolated analogue (4 to 20 mA) and pulse outputs (volts free) for forward and reverse flow. These outputs shall be fully user configurable.

The meter shall offer lifetime stable zero so that routine zeroing is not required. The meter shall automatically indicate zero flow under empty pipe sensor conditions.

Condition monitoring of the sensor, transmitter and interconnection cable shall be available to provide verification of long-term satisfaction field system operation. This shall be traceable and shall conform to ISO 9000 series quality standards. The meter shall be designed and manufactured under the ISO 9000 series quality standards. The meter shall have lay lengths to current ISO standards for magnetic meters to facilitate interchangeableness of products.

The wetted materials shall be compatible with, and suitable for, the appropriate application. An internationally recognized

Pumps
Pumps manufactured by (Grundfos, Gorman Rupp, Flight) should be considered in all cases to suite pumping requirements deviations to this must be approved by the client/engineer.

All dry running pumps are to be Centrifugal self-priming pumps as per the billed specified item, complete with base plate, high efficiency motor and coupling. The pumps are to operate as 1 duty 1 standby have individual suction pipes with isolation valves installed as per civil drawings details.

Condition monitoring of the sensors, transmitter and interconnection cables shall be able to achieve the designated duty head and required flows. All pumps shall account for the minimum NPSH requirement at invert level of its structure and to be able to cope with raw sewage contaminates.

All pipe work to conform SANS 1600/3

All pumps to be fitted with isolation valves, ball type non return valves, dismantling couplings and air release valves for ease of maintenance taking into cognizance continued operations on removal of pumps for maintenance purposes.

All pumps to have a Glycerin filled pressure gauge on the suction and delivery end of each pump.

All submersible pumps to be fitted with guide rails and galvanized chains for ease of removal during maintenance purposes. All pumps are to conform to billed items and to of

C3.7 ELECTRICAL

3.7.1 CONTRACTOR DESIGN AND OBLIGATIONS

The Contractor shall be responsible for the workshop drawings and wiring diagrams required for the manufacturing and installation of motor control centers , buildings and instrumentation.

3.7.2 QUALITY OF MATERIALS

Only materials of first-class quality shall be used and all materials shall be subject to the approval of the employer's agent prior to installation. Departmental specifications for various materials to be used on this contract such as department public works and infrastructure standard electrical specification (section A, B and C) are not attached but form part of this specification and available on the department website and from the employer's agent on request.

Wherever applicable the material is to comply with the relevant South African Bureau of Standards, department of public works and infrastructure electrical specifications which are available or to IEC Specifications, where no SANS specifications exist.

Materials wherever possible, must be of South African manufacture.

C3.7.3 TRAINING AND MAINTENANCE DURING DEFECT LIABILITY PERIOD

The Contractor shall inform the Engineer on the completion of the project and provide training to the person(s) responsible for the operation and maintenance of the project. The training shall be conducted for a period equivalent to 8 hours, starting with the basic information and getting into detail as time progresses. The training will be scattered into a minimum of 2 days. Training shall not be conducted unless materials and planned procedure is approved by the Engineer and the client representative. The number of personnel to attend the training shall be determined by the Client and contractor to ensure they all have training material as may be required.

During the defect liability period, the Contractor shall be responsible for the complete maintenance of equipment and plant according to the suppliers/manufacturer's specifications. Maintenance of the installation shall mean the regular servicing, lubrication, repairing, cleaning and adjustment of the installation as recommended by the manufacturers as well as the free of charge replacement of any defective components during this period.

A suitably qualified and trained person shall routinely and regularly examine and test the installation once every 3 months and shall also perform all the necessary maintenance tasks to ensure smooth and faultless operation. A quarterly report shall be submitted to the Engineer.

The Contractor shall immediately, on the day of first call-out, attend to breakdown/emergency calls. In the event of non-performance by the Contractor in this respect, the employer shall be entitled to make such other arrangements as are necessary, the cost of which shall be for the Contractor's account or deductible from any outstanding retention monies.

A logbook shall be kept and all servicing and repairs shall be recorded in this logbook with meticulous care. The logbook shall at all times be put at the disposal of the Engineer. The Contractor shall issue the logbook with full record of all services and repairs to the employer after the defect liability period has expired.

C3.7.4 OPERATION AND MAINTENANCE MANUALS

Three (3) sets of comprehensive operating instructions and maintenance procedures shall be provided on completion of the commissioning of the installation

One draft copy shall be submitted for scrutiny PRIOR to any commissioning.

C3.7.5 FIRE EXTINGUISHERS

Portable fire extinguishers containing liquefiable gaseous halons for Class S, B, C and E fires shall be installed. Areas with a room floor area not exceeding 50m² shall be equipped with a 2.5kg unit and rooms bigger than 50m² shall be equipped with a 4kg unit and equivalent mass of smaller units. In structures where more than one room is incorporated, housing different hazardous points,

each room shall be equipped with appropriate extinguishers, e.g. a generator room with a separate fuel store.

Portable extinguisher shall comply with SANS 0105. Fire extinguishers shall be installed near exits or along exit routes in conspicuous and unobstructed positions and marked with conspicuous signboards. The extinguisher must be so installed that the carrying handle is 1.25m above floor.

Extinguishers that are to be mounted outside and adjacent to the main entrance door shall be mounted with a suitable cupboard.

C3.7.6 PLANNING AND PROGRAMING

The Contractor shall provide and maintain a detail construction program indicating duration of all manufacturing processes, transportation, delivery and installation dates.

There are no constraints on the execution of the work. However, any disruption of the normal working of the plant must be planned and co-ordinated in conjunction with the Engineer and Client

C3.7.7 SEQUENCE OF WORK

The electrical works shall be coordinated with the mechanical and civil works to ensure smooth execution.

C3.7.2.8 OTHER CONTRACTORS ON SITE

Should other contractors be required on site coordination between the concerned parties would be essential and this should not interfere with the works under this contract in any significant way.

C3.7.9 ELECTRICAL SPECIFICATION

C3.7.9.1 MOTOR CONTROL CENTRE (MCC)

The MCC is to be manufactured from 3CR12 with a minimum thickness of 1.5mm. The MCC is to be light orange with smooth white back plates, finished from baked enamel with dry fil thickness of at least 0.1mm. Immediately after cleaning all surfaces shall be covered by a rust inhibiting, tough unbroken metal-phosphate film and then thoroughly dried. The paint shall have an impact resistance of 5,65 J on cold-rolled steel plate and a scratch resistance of 2kg.

The MCC shall be IP 54 rated and shall be specifically sized for the equipment for which it is to house. The MCC shall be designed in such a way that adequate heat dissipation is accomplished in order to prevent any de-rating of equipment or premature tripping of circuit breakers or any other electrical devices.

Variable Speed Drive (VSD)

All electrical motors shall be started using variable speed, only the submersible pump motor shall start using direct online starter. Each variable speed drive shall be rated at the rating of the motor and shall digital keypad and display screen with keys such as run, stop/reset, forward or reverse, hand, auto, and menu etc. It shall be designed to fit inside the MCC and shall have a built-in active front end rectifiers to reduce harmonics. It shall be rated at minimum input voltage of 230V phase to neutral and 400V phase to phase and shall have a minimum overload tolerance of 120% of rated current for at least 1 minutes every 5 minutes and a minimum 160% of rated current for 3 seconds during every 25 seconds.

C3.7.9.2 CONTROL PHILOSOPHY OF THE WATER TREATMENT MOTORS

Modes of operation

The equipment shall operate in three modes of operation 'AUTO', 'MAN' & 'OFF' and shall be available via a 3- position selector switch on the control starter panel door.

With the selector switch selected in 'AUTO' the control shall be as follows:

The equipment will automatically flip flop, starting and stopping according to the start and stop conditions as stated above.

All fault and alarm conditions will need to be reset manually from the pump station when selected in 'AUTO'. With the selector switch selected in MAN' the control shall be as follows:

In the manual selected position, the pumps shall be started manually by means of separate start and stop push buttons for each pump.

Manual operation is not to be the normal mode of operation and is only to be used for testing and maintenance purposes, therefore the operation shall be maned at all times during such operation with skilled and trained operators.

With the selector switch selected in 'OFF' the control shall be as follows:

No control shall be possible and any previously running equipment shall stop.

Pump & Motor Protection

The following pump and motor protection shall be available in the operational modes indicated in the table below:

TYPE OF PROTECTION	AUTO	MAN	OFF
Short circuit & overcurrent protection			
Over & under voltage			
Phase sequence & imbalance			
Low & high level (float switch)			
Motor high temp			
Phase angle / Under load Protection	×	×	

Any fault condition that occurs must be indicated by an illuminated indication light and prevent any further operation of the pump until the reset push button has been pressed. Only once the fault has been cleared and the reset button pressed should the indication light go off and normal operation allowed commencing. All protection and float control circuits must be wired failsafe.

C3.7.10 DE-COMMISSIONING OF THE EXISTING PANELS

The existing electrical equipment is to remain in service until the new MCC has been installed and commissioned for a trouble-free period of at least 1 week. Only once a trouble-free period of 1 week has been reported to the Engineer shall permission be granted to the contractor to proceed with the de-commissioning and upgrading of the existing. Should this not be a viable solution a new plan shall be established and presented to engineer for approval. The newly established plan shall

ensure that the Hospital has enough water all times.

C3.7.11 LIGHTNING PROTECTION

All equipment in the control MCC shall be adequately protected against lightning and lightning induced disturbances on the control and power cables. Suitable lightning suppressors, surge arrestors and circuit breakers shall be provided to suit the particular application.

C3.7.12 GENERAL ELECTRICAL REQUIREMENTS

The Contractor shall refurbish the general electrical installation on site including all small power outlets and luminaries.

C3.7.13 LOW VOLTAGE (L.V.) CABLES AND TRENCHES

Supply and install the following L.V. cables. The cables shall comply with the requirements of SANS 1507 as amended. The cables shall be of the PVC/PVC/SWA/PVC type.

C3.7.14 IDENTIFICATION OF CABLES

Cables shall be identified at all terminations by means of punched metallic bands or marked with labels or tags. (Refer also to SANS 10142). The use of PVC tape with punched characters is not acceptable. The identification numbers of cables shall be shown on "as built" drawings of the Installation.

C3.7.15 TESTING

Each cable shall be tested after installation in accordance SANS 1507 (up to 1 kV) and SANS 97 (up to 11 kV) as well as the requirements of the Local and Supply Authorities.

LV Cables shall be tested by means of a suitable megger at 1 kV and the insulation resistance shall be tabulated and certified.

The Contractor shall make all arrangements, pay all fees and provide all equipment for these tests. The cost of testing shall have been included in the tender price.

The Contractor shall notify the Department/Engineer timeously so that a representative of the Department may witness the tests.

On completion of the tests on any cable, the Contractor shall without delay, submit three copies of the certified Test Reports to the Department/Engineer.

C3.7.16 NEW LUMINAIRES

	Description/Specification	**Typical Fitting**
	Surface mount 40W LED luminaire with 4000lm and dimensions of (LxWxH) 1270 x 86 x 90 mm shall consistsof an injection-moulded, flame-retardant polycarbonate housing and prismatic diffuser. A powder coated white reflector and control gear tray upon which all electrical components shall be mounted and secured by means of multiple twist lock latches to secure the reflector to the housing. Silicon sponge seal shall be moulded into the housing to ensure an optimal seal between the housing and the prismatic diffuser. Two of the stainless-steel latches shall facilitate the hinging of the diffuser and ensure correct alignment when closing the diffuser. It shall be designed to operate LEDs of up to 65W.The luminaire shall come complete with constant current driver,1.7 to 2.3kg weight, mains tolerance of ± 10% at 230V voltage supply, line frequency of 50Hz, Class I electrical safety class, 10kV/10kA surge protection, power factor of ≥ 0.95, operating temperature of -30 to +35° C, enclosure tightness of IP 65 and mechanical withstand impact of IK07.	
	Surface mount 13W LED luminaire with 2000lm and dimensions of 280mm diameter shall have base and trimring manufactured from of high pressure die-cast marinegrade, the trim ring casting shall be mounted onto the base casting by means of stainless steel M5 Allen head screws located outside the lamp compartment. The baseand trim shall be finished with epoxy powder coating. Anopal non-discolouring high impact acrylic injection moulded diffuser shall be used and shall offer excellent vandal resistance, be highly translucent and shall not discolour even when subjected to the harshest UV environments. A silicon sponge gasket shall be fitted into a special groove in the diffuser to prevent damage to thegasket during installation and to achieve the certified ingress protection rating of IP65, It shall be designed to operate LEDs of up to 13W.The luminaire shall come complete with 300mm supply lead, constant current driver, mains tolerance of ± 10% at 230V voltage supply, line frequency of 50Hz, Class I electrical safety class, 10kV/10kA surge protection, power factor of ≥ 0.95, operating temperature of -20 to +35° C, and mechanical withstand impact of IK08.	

Wall mount (flood mounting) 55W 24LED luminaire with 7012lm and dimensions of (LxWxH) 3396mm x 249mm x 63mm shall have body manufactured from marine grade aluminium, high-impact polycarbonate protector and painted finish, housing shall be corrosion-resistant high- pressure die-cast and shall provide access to photometric engine and electronic assembly in case of upgrading or replacing components. The luminaire shall have certified ingress protection rating of IP66, It shall bedesigned to operate LEDs of up to 55W.The luminaire shall come complete with constant current driver, mains tolerance of ± 10% at 230V voltage supply, line frequency of 50Hz, Class I electrical safety class, 10kV/10kA surge protection, power factor of ≥ 0.95, operating temperature of -20 to +60° C, and mechanical withstand impact of IK10.	

C3.7.17 CONDUIT AND WIRING

Galvanised plain-end steel conduit shall be used for lighting and power installation, all conduit shall be chased into wall unless an agreement between the engineer and contractor has been reach to have it surface. All wiring shall be channelled through conduit throughout the installation and 2.5mm2 single core stranded conductor shall be used for lighting and 4mm2 shall be used for single phase socket-outlet points unless. Provisional quantities of conduit, wiring and small power outlets have been included in the bills of quantities. Instructions as to the final requirements will be issued during the construction stage. All items will be re- measurable.

C3.7.18 TELEMETRY

The Contractor will be responsible for the supply, installation and commissioning of a new telemetry system. The Telemetry units will be wall mounted on enclosures manufactured from 3CR12, with baked enamel finish. All Telemetry radios are to operate on the 433.05 - 434.79Mhz license free bandwidth. All telemetry shall be 12 VDC operated with battery backup. A minimum standby time of 24 hours is required.

C3.7.19 TELEMETRY EQUIPMENT

System Overview
The telemetry system supplied will be used for remote monitoring and control to various designated sites.

The system shall not only allow for units that accept direct I/O (e.g., digital, analogue, pulses) but also gateway units that allow direct interfacing to common industrial protocols (e.g. Modbus, Modbus Plus, Ethernet/IP, Profibus, DF1) commonly employed by various PLC vendors as well as third party equipment manufacturers.

It shall therefore be possible to have a combination of both wireless I/O and wireless gateways in a single telemetry system that can scale as the system requirements dictates. The system aims for easy setup and maintenance (by the supplier as well as end-user if necessary). The software to configure and maintain the radios shall be made freely available with this system.

It is strongly advised that radio path testing is undertaken where uncertainty lies on the reliability of the radio signal strength. The radio telemetry system shall operate in the 430 – 450MHz range with a software- adjustable RF transmit power level of up to 5W.

Principle of Operation
Radio transmissions must occur when an input signal changes (change-of-state). That is, when a digital (e.g. switch contact) input turns off or on, or when the value of an analogue input changes by a pre-configured amount (delta-change), a radio transmission should occur. There should also be regular update transmissions (configurable) to check the value of the input signals and to insure the integrity of the communications signal. The communications status shall be made available as an alarm output. In the event of a communications failure, it shall be possible to reset digital and analogue outputs to zero.

Input signals should be transmitted in a data frame which shall include the address of the transmitting module (and repeaters if used), the address of the destination module, and a CRC error check. The error check will be used to ensure that there is no corruption of the data frame during transmission. The same radio module shall have digipeating (digital repeating) capabilities as well. It shall also be possible to have peer-to-peer communications between modules – this means that wireless units can transmit directly to any other wireless unit, and can also transmit to multiple wireless units. There are no master units and no slaves and it shall be possible for all input signals to be transmitted to multiple destinations.

Each module should have handshaking capabilities over the air so that if transmitting module is supposed to receive an acknowledgment from the receiving module, and the transmitting module does not receive this acknowledgment, it should have retry capabilities. It must be possible to flag a communications failure via a digital output on the unit.

General Specifications Power Supply:
The unit should incorporate an internal switched-mode power supply design that will accept an input voltage of 230V +-10% tolerance supply. The unit should also have a built-in battery charger to allow for an uninterrupted power supply and internally automatically switch to 12V battery backup in the event of a power failure. On return of main supply, the unit must switch back to mains operation, and charge the battery. It must also be possible to power the unit directly from a 12V battery at the battery terminals. The unit should have the ability to communicate its current state in real time to the RTU, giving the operator the ability to monitor and log voltages and currents as well as battery and AC state. The radios power circuit must have built-in intelligence and should be able to automatically alarm on loss of mains supply, loss of solar charging or low battery voltage and it should be possible to transmit these alarm signals to remote modules as digital output signals.

Inputs / Outputs Description:
See the technical specifications table below to a description of the I/O capabilities of the radio modules.

RS232 Port:
The serial port must be a 9 pin DB9 female and should provide a connection to a terminal or to a PC for configuration and testing. The port should not be used for radio data communications except in the case of wireless gateways where it could be used for interfacing to a host device such as a PLC.

RS485 Port:
All telemetry modules will have I/O expansion capability via the RS485 port in the event that outstations I/O count needs to be expanded. The units must be expandable with up to 31 remote I/O units on the RS485 bus and mounting distances of up to 1200m from the radio should be achievable. The expansion I/O should consist of several options that include Digital, Analogue and Pulse input / output variations.

Software Configuration:
The units should be easy to configure via standard Windows-based software. Programming the units can be done via a straight serial cable to the RS232 serial port. It must also be possible to extract

the software configuration from the module.
The configuration software should be project-based and a single project file shall be used for the complete telemetry installation. There shall be password protection facilities for the project file to prevent unauthorized use. There software shall log and store data as required by the client for future use or reference.

Diagnostics and Testing:
The unit should provide diagnostic and test functions by connecting a PC terminal to the module. It should be possible to test both I/O and communication functions. The unit will include a radio strength measurement, which provides an indication of background noise as well as received radio strength. This feature shall allow radio paths to be tested without any additional specialized test equipment. In the case of wireless Gateways, it should be possible to read and write to the actual units data registers for testing and diagnostic purposes.

Summary of Minimal Technical Specifications for Radio Telemetry Equipment. Remote Terminal Unit

Item	**Minimum Specification**
Communication	Data Radios, Cell SMS, Cell GPRS, RS232/485 and Ethernet etc
Features	Real-time I/O device, Intelligent Data Logger, Remote time stamping of event and logged data, Configurable and programmable from the Picasso Configuration Toolbox, modular and easily expandable, EMI Protection, Programmable with PLC Languages, Industrial standard high speed processor, On-Board 1Meg-Word Flash and Gig-Word nonvolatile RAM, On-Board Real-time clock and watch-dog timer , On-Board LED's indicating the Digital Input and Digital Output Status , Communication Orchestrator, Build to ISO 9000 Standards, 24 I/O's on the main processorboard, DIN,8 AIN,8DOT,connects to interface modules such as I/O lightning protection units, galvanic isolation units for AIN's and 10A Interposing relay modules.
Analog Inputs (AIN)	8 Inputs, 12 Bit Resolution, 0.1 % Accuracy, Single ended, Additional AIN on expansion modules,
Digital Inputs (DIN)	8 Inputs, with LED status display, Opto-Isolated, 5 kV isolation andAdditional DIN on expansion modules to accommodate all I/Os
Digital Outputs (DOT)	8 Outputs with LED status display, Open Collector, 250mA sinking perchannel and additional DOT on expansion modules
Other Specifications	Voltage: 9 to 17Volts DC,120mA power consumption,2 x RS232 ports (300to 57600 bps) RJ45(EIA-561 Compatible)
Data Reporting	Data shall be capable of being reported to any SCADA on the communication network. It shall be capable of being configured to sendtext messages to mobile cell phone users to report alarms

Digital Input Surge Protector

Item	**Minimum Specification**

Features	Digital input lightning protection, No isolation available on the module.
Supply Voltage DC	Minimum 9V, maximum 15V and standard 12V
Physical Dimension	61mm x 42mm x 80mm (LxWxH)
Connection Sockets	14-Way Ribbon to the RTU or I/O Modules, 2 x 8-way terminationconnectors, 4 Way Power Supply 12V+, Ground.
Protection	10kA per channel and maximum input voltage 30Vdc
Channel (I/O)	Four channels

Power Supply

Item	**Minimum Specification**
DC supply	13.8V (tunable), max 4.3A (split between DC output and battery charge)
AC supply	Input: 90~264VAC, 47~63Hz
Battery supply	Battery charge: max 1.5A
Battery	Low Maintenance Battery 12Volt 18Ah
Rated Power	60W
Protection	Short circuit, overload and over-voltage protection, Battery low, batterypolarity protection

Data Radio

Item	**Minimum Specification**
Transmission Power	2W
Working Frequency	433MHz, options 402-470MHz
Power Consumption	DC5V Power, receiving current <50mA, transmitting current <1.5A/2W(<1A/1W); Sleeping current ＜1mA.
Receiver Sensitivity	-112dBm
Working Temperature	-40℃~+85℃
Output/ Input Interface	RS 232, RS 485 and TTL
Power control	One sleeping model, awaken from hardware
Circuit Structure	Radio adopts chip integration, the conversion time for transceiver should beshort less than 20ms, all indications consistency and better performance
High Anti-Interference and Low BER (Bit error Rate)	Based on the GFSK modulation mode, it shall adopt the efficient communication protocol. The actual bit error rate shall be 10-5～10-6 when channel bit error rate is 10-2.

Technical Competency
The supplier of the telemetry system must have experience with the radios being supplied and should either have undergone basic training or provide an authorized letter from the local agency indicating that they are able to offer sufficient technical support on the telemetry system.

Service and Maintenance
The type of telemetry system deployed should ensure that in the event of the end user not getting satisfactory service from the supplier, they are able to seek assistance and technical support from an alternate supplier. The radio configuration software and all future revisions of it should be freely available to the end-user.

Warranty
The radio telemetry modules used must ensure long-term reliable operation. A limited lifetime warranty from the manufacturer should be included as standard on all radio telemetry modules supplied.

C3.7.2.20 SCADA (SUPERVISORY CONTROL AND DATA ACQUISITION) SYSTEM

SCADA system shall provide supervisory control, monitoring and management of waste water system, by acquiring and analysing the data from these remote stations. It shall gather the real-time data from the stations, presents the data on various HMIs, records and logs the data on SCADA database management.

Radio telemetry shall gather data from other stations to the main station and the data shall be transferred from main station to the SCADA system via fibre, however the system shall be capable of gathering data from any other station during communication breakdown.
The system shall be so designed to allow addition of future stations which shall be added and form part of the entire system at later stage.

SCADA system shall store received data which shall also be used for trending, alarming, reporting and archiving, this system shall be capable of sending an alarm via sms to the relevant stakeholders in the event of unattended alarm.

The supply and installation of the system shall come complete with the software, ADSL, correctly sized computer to cater for current installation and wastewater stations which shall be added at a later stage and any other accessories which are required to supply a complete operational system.

The system shall have as a minimum, an operating system of 64-bit windows 8.1 Professional, i7 processor, 8 GB RAM and 40-inch commercial type computer screen.

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QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT

C4 SITE INFORMATION

C4.1 Scope

The documentation included in this section describes the site at the time of tender to enable the tenderer to price his tender and decide upon his method of working and programming.

Only actual information about physical conditions on the site and its surroundings have been included in this section and interpretation is a matter for the tenderers.

C4.2 Subsoil Conditions

A geological investigation was undertaken in the project area to determine conditions of the underlying soil and rock structures. The geotechnical report is attached as Annexure A

C4.3 Existing Services

The positions of the services, based on the information supplied by the relevant authorities have been shown on the drawings. However, the accuracy of the information is not known. The Contractor will be required to establish the positions and depths by hand expose services that could possibly affect the proposed works.

This operation must commence immediately upon handover of the site so that any design changes required can be made and that any interface with the relevant service departments can be arranged to prevent any delays to the contract. The Contractor will be required to interface with the relevant departments directly to arrange for services to be moved if necessary.

C4.5 Existing Development

The project falls substantially within a built up area, and such impacts on existing roads and traffic, and is close to existing dwellings in certain sections.

C4. 6 Sources of material

Other than materials used for partial backfilling of trenches, material shall be obtained from commercial sources.

C4.7 Drawings

A list of drawings that are included with this document is listed below

ANNEXURE A: GEOTECHNICAL REPORT

ANNEXURE B: ENVIRONMENTAL REPORT

(PENDING)

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QUMBU WASTEWATER TREATMENT PLANT AND RETICULATION – CONSTRUCTION OF QUMBU WASTEWATER TREATMENT PLANT PHASE 1

C5 DRAWINGS

DESCRIPTION	DRAWING NUMBER
WWTW Site Layout	E19001-SP-NS-C01
WWTW Layout Plan	E19001-SL-NS-C02
Trial Pit Layout	E19001-SP-NS-C03
Chlorine Contact Chamber Plan Layout and Sections RC Details	E19001-CONC-S01
Chlorine Contact Chamber Base Reinforcing	E19001-RF-CONC-S01-1
Chlorine Contact Chamber Base Reinforcing	E19001-RF-CONC-S01-2
Chlorine Contact Chamber Plan Layout and Sections RC Details	E19001-CONC-S01-3
Chlorine Contact Tank	E19001-CONC-RS-S05
Inlet Works Sheet 1 of 2	E19001-CONC-CS-C01-1-2
Inlet Works Sheet 2 of 2	E19001-CONC-CS-C01-2-2
Primary Settling Tank	E19001-CONC-CS-C02
Denitrification Tank	E19001-CONC-NS-S13-0
Bio Filter	E19001-CONC-NB-C03
Clarifier Tank	E19001-CONC-RS-S04
Sludge Drying Beds	E19001-CONC-RS-C05
Primary Settling Tank RC Details 1 of 2	E19001-RF-CONC-S01-R1
Primary Settling Tank RC Details 2 of 2	E19001-RF-CONC-S01-R1/1
Primary Settling Tank Reinforcing 1 of 2	E19001-RF-CONC-S01-R1/2
Primary Settling Tank Reinforcing 2 of 2	E19001-RF-CONC-S01-R1/3
Sludge Beds Reinforcing	E19001-RF-CONC-S01-R1/4
WWTW Roads Layout	E19001-PLES-NS-C04
Care Taker House Plan	E19001-CONC-NS-S06
Store Room Plan	E19001-CONC-NS-S07
Office Plan	E19001-CONC-NS-S08
Guard House Plan	E19001-CONC-NS-S09
Road Crossing	E19001-CONC-NS-S10
Pump Sump	E19001-CONC-RS-S07