NQUTHU LOCAL MUNICIPALITY

TENDER DOCUMENT

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

PREPARED BY:
The Municipal Manager
NQUTHU LOCAL MUNICIPALITY
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NAME OF TENDERER: ……...

SUPPLIER NO AS PER CSD:……

TENDER AMOUNT (INCL.VAT@15%):……..

CLOSING DATE AND TIME: Monday, 04 September 2023 at 12:00

NQUTHU LOCAL MUNICIPALITY

APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

CLOSING DATE AND TIME: Monday, 04 September 2023 at 12:00

Tenders are hereby invited from Local SMME's, emerging contractors and co-operatives to submit bids for the **APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL**

Tenderers should have a CIDB contractor grading of 4 GBPE.

Tender documents will be obtainable on **Monday, 21 September 2023** from 08H00am – 14H30 at the Finance Department (Nquthu Municipal Offices) upon payment of a non-refundable tender levy of **R632,00** or may be downloadable free of charge from www.etenders.gov.za. Only bank guaranteed cheques or cash will be accepted. The compulsory briefing session will be held on **Monday, 28 August 2023 at 12h00** at the municipal offices in Nquthu (Council Chamber) and tenderers are expected to meet the Municipal representatives punctually as indicated. Failure to attend will result in a bidder not being considered.

Duly completed tenders must be sealed in an envelope clearly marked: **"MUNICIPAL MANAGER, NQUTHU LOCAL MUNICIPALITY, NQULM18/2023-2024 APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL**
CLOSING DATE: **Monday, 04 September 2023** AT 12H00. A document must be placed in the tender box not later than the above mentioned at Nquthu Local Municipality offices, 83/11 Mdlalose Street, Nquthu.

Late tenders, incomplete tender documents and tenders per email or fax will not be accepted and the Nquthu Local Municipality does not bind itself to accept the lowest or any tender. Nquthu Local Municipality reserves itself the right to accept a tender as a whole or in part.
All administrative enquiries can be directed to MANDLA KUNENE at 064 534 9233 and the technical enquiries can be directed to Mr. Nkala.

Mr M.B. JIYANE
MUNICIPAL MANAGER **NOTICE NO: NQULM18/2023-2024**

Contents

NQUTHU LOCAL MUNICIPALITY

NQULM18/2023-2024 APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

T1.2 Bid Data

The conditions of Bid are the Standard Conditions of Bid as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za) which are reproduced without amendment or alteration for the convenience of Bidders as an Annex to this Bid Data

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

The additional conditions of Bid are:

Clause number	Bid Data
F.1.1	The employer is the NQUTHU LOCAL MUNICIPALITY**.**
F.1.2	The Bid documents issued by the employer comprise: T1.1 Bid notice and invitation to Bid T1.2 Bid data T2.1 List of returnable documents T2.2 Returnable schedules **Part 1: Agreements and contract data** C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Form of Guarantee C1.4 Adjudicator's appointment **Part 2: Pricing data** C2.1 Pricing instructions C2.2 Activity schedules / Bills of Quantities **Part 3: Scope of work** C3 Scope of work **Part 4: Site information** C4 Site information
F.1.4	The employer's details are: Name: **Nquthu Local Municipality** Address: **83 Mdlalose Street,Nquthu** Tel: 034 271 6100 E-mail: info@nquthu.gov.za

F.2.1	Only those Bidders who have in their employ management and supervisory staff satisfying the requirements of the Scope of Work for labour intensive competencies for supervisory and management staff are eligible to submit Bids.

Standard Conditions of Bid

(As contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement)

F.1 General

F.1.1 Actions

The employer and each Bidder submitting a Bid offer shall comply with these conditions of Bid. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently.

F.1.2 Bid Documents

The documents issued by the employer for the purpose of a Bid offer are listed in the Bid data.

F.1.3 Interpretation

F.1.3.1 The Bid data and additional requirements contained in the Bid schedules that are included in the returnable documents are deemed to be part of these conditions of Bid.

F.1.3.2 These conditions of Bid, the Bid data and Bid schedules which are only required for Bid evaluation purposes, shall not form part of any contract arising from the invitation to Bid.

F.1.3.3 For the purposes of these conditions for the calling for expressions of interest, the following definitions apply:

a) **comparative offer** means the Bidder's financial offer after the factors of non-firm prices, all unconditional discounts and any other Bided parameters that will affect the value of the financial offer have been taken into consideration
b) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the Bid process; and
c) **fraudulent practice** means the misrepresentation of the facts in order to influence the Bid process or the award of a contract arising from a Bid offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
d) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

Each communication between the employer and a Bidder shall be to or from the employer's agent only, and in a form that can be read, copied and recorded. Writing shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a Bidder. The name and contact details of the employer's agent are stated in the Bid data.

F.1.5 The employer's right to accept or reject any Bid offer

F.1.5.1 The employer may accept or reject any variation, deviation, Bid offer, or alternative Bid offer, and may cancel the Bid process and reject all Bid offers at any time before the formation of a contract. The

employer shall not accept or incur any liability to a Bidder for such cancellation and rejection, but will give written reasons for such action upon written request to do so.

F.1.5.2 The employer may not subsequent to the cancellation or abandonment of a Bid process or the rejection of all responsive Bid offers re-issue a Bid covering substantially the same scope of work within a period of six months unless only one Bid was received and such Bid was returned unopened to the Bidder.

F.2 Bidder's obligations

F.2.1 Eligibility

Submit a Bid offer only if the Bidder complies with the criteria stated in the Bid data and the Bidder, or any of his principals, is not under any restriction to do business with employer.

F.2.2 Cost of Biding

Accept that the employer will not compensate the Bidder for any costs incurred in the preparation and submission of a Bid offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.

F.2.3 Check documents

Check the Bid documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.2.4 Confidentiality and copyright of documents

Treat as confidential all matters arising in connection with the Bid. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a Bid offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a Bid 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 Bid documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the Bid documents, which the employer may issue, and if necessary, apply for an extension to the closing time stated in the Bid data, in order to take the addenda into account.

F.2.7 Clarification meeting

Attend **compulsory a clarification meeting** at which Bidders may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the Bid data.

F.2.8 Seek clarification

Request clarification of the Bid documents, if necessary, by notifying the employer at least five working days before the closing time stated in the Bid data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) may not be for the full cover required in terms of the conditions of contract identified in the contract data. The Bidder is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the Bid offer

F.2.10.1 Include in the rates, prices, and the Bided total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful Bidder, such duties, taxes and levies being those applicable 14 days before the closing time stated in the Bid data.

F2.10.2 Show VAT payable by the employer separately as an addition to the Bided 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 Rand unless instructed otherwise in the Bid data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Not make any alterations or additions to the Bid documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the Bidder. All signatories to the Bid offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative Bid offers

F.2.12.1 Submit alternative Bid offers only if a main Bid offer, strictly in accordance with all the requirements of the Bid documents, is also submitted. The alternative Bid offer is to be submitted with the main Bid offer together with a schedule that compares the requirements of the Bid documents with the alternative requirements the Bidder proposes.

F.2.12.2 Accept that an alternative Bid offer may be based only on the criteria stated in the Bid data or criteria otherwise acceptable to the employer.

F.2.13 Submitting a Bid offer

F.2.13.1 Submit a Bid offer to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the Bid data.

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing in black ink.

F.2.13.3 Submit the parts of the Bid offer communicated on paper as an original plus the number of copies stated in the Bid data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the Bid offer where required in terms of the Bid data. The employer will hold all authorized signatories liable on behalf of the Bidder. Signatories for Bidders proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the Bid offer.

F.2.13.5 Seal the original and each copy of the Bid offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the Bid data, as well as the Bidder's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the Bid data, place and seal the returnable documents listed in the Bid data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the Bid data, as well as the Bidder's name and contact address.

F.2.13.7 Seal the original Bid offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the Bid data.

F.2.13.8 Accept that the employer shall not assume any responsibility for the misplacement or premature opening of the Bid offer if the outer package is not sealed and marked as stated.

F.2.14 Information and data to be completed in all respects

Accept that Bid 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

F.2.15.1 Ensure that the employer receives the Bid offer at the address specified in the Bid data not later than **12h00 on Monday, 04 September 2023** when as stated in the Bid data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept Bid offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the Bid data.

F.2.15.2 Accept that, if the employer extends the closing time stated in the Bid data for any reason, the requirements of these conditions of Bid apply equally to the extended deadline. **F.2.16 Bid offer validity**

F.2.16.1 Hold the Bid offer(s) valid for acceptance by the employer at any time during the validity period stated in the Bid data after the closing time stated in the Bid data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the Bid data for an agreed additional period.

F.2.17 Clarification of Bid offer after submission

Provide clarification of a Bid offer in response to a request to do so from the employer during the evaluation of Bid 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 total of the prices or substance of the Bid offer is sought, offered, or permitted. The total of the prices stated by the Bidder shall be binding upon the Bidder.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred Bidder following a competitive selection process, should the Employer elect to do so.

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the Bid offer, the Bidder'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 Bidder 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 Bid offer as non-responsive.

F.2.18.2 Dispose of samples of materials provided for evaluation by the employer, where required.

F.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the Bid data.

F.2.20 Submit securities, bonds, policies, etc.

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

F.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

F.2.22 Return of other Bid documents

If so, instructed by the employer, return all retained Bid documents within 28 days after the expiry of the validity period stated in the Bid data.

F.2.23 Certificates

Include in the Bid submission or provide the employer with any certificates as stated in the Bid data.

F.3 The employer's undertakings

F.3.1 Respond to clarification

Respond to a request for clarification received up to five working days prior to the Bid closing time stated in the Bid Data and notify all Bidders who drew procurement documents.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the Bid documents to each Bidder during the period from the date of the Bid Notice until seven days before the Bid closing time stated in the Bid Data. If, as a result a Bidder applies for an extension to the closing time stated in the Bid Data, the Employer may grant such extension and, will then notify it to all Bidders who drew documents.

F.3.3 Return late Bid offers

Return Bid offers received after the closing time stated in the Bid Data, unopened, (unless it is necessary to open a Bid submission to obtain a forwarding address), to the Bidder concerned.

F.3.4 Opening of Bid submissions

F.3.4.1 Unless the two-envelope system is to be followed, open valid Bid submissions in the presence of

Bidders' agents who choose to attend at the time and place stated in the Bid data. Bid submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2 Announce at the opening held immediately after the opening of Bid submissions, at a venue indicated in the Bid data, the name of each Bidder whose Bid offer is opened, the total of his prices, preferences claimed and time for completion, if any, for the main Bid offer only.

F.3.4.3 Make available the record outlined in F.3.4.2 to all interested persons upon request.

F.3.5 Two-envelope system

F.3.5.1 Where stated in the Bid data that a two-envelope system is to be followed, open only the technical proposal of valid Bids in the presence of Bidders' agents who choose to attend at the time and place stated in the Bid data and announce the name of each Bidder whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by Bidders, then advise Bidders who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of Bidders, who score in the quality evaluation above the minimum number of points for quality stated in the Bid data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to Bidders whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

Not disclose to Bidders, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of Bid offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful Bidder.

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a Bidder to influence the processing of Bid offers and instantly disqualify a Bidder (and his Bid offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

Determine, on opening and before detailed evaluation, whether each Bid offer properly received:

a) meets the requirements of these Conditions of Bid,
b) has been properly and fully completed and signed, and
c) is responsive to the other requirements of the Bid documents.

A responsive Bid is one that conforms to all the terms, conditions, and specifications of the Bid documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- change the Employer's or the Bidder's risks and responsibilities under the contract, or
- affect the competitive position of other Bidders presenting responsive Bids, if it were to be rectified.

Reject a non-responsive Bid offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors

Check responsive Bid offers for arithmetical errors, correcting them in the following manner:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- If a bill of quantities (or schedule of rates) 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 will be corrected.
- 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 Bidder's addition of prices, the total of the prices shall govern and the Bidder will be asked to revise selected item prices (and their rates if a bills of quantities applies) to achieve the Bided total of the prices.

Consider the rejection of a Bid offer if the Bidder does not correct or accept the correction of his arithmetical errors in the manner described above

F.3.10 Clarification of a Bid offer

Obtain clarification from a Bidder on any matter that could give rise to ambiguity in a contract arising from the Bid offer.

F.3.11 Evaluation of Bid offers

F3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive Bid offer to a comparative offer and evaluate it using the Bid evaluation method that is indicated in the Bid Data and described below:

Method 1: Financial offer	1) Rank Bid offers from the most favorable to the least favorable comparative offer. 2) Recommend highest ranked Bidder for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 2: Financial offer and preferences	1) Score Bid evaluation points for financial offer.
	2) Confirm that Bidders are eligible for the preferences claimed and if so, score Bid evaluation points for preferencing. 3) Calculate total Bid evaluation points. 4) Rank Bid offers from the highest number of Bid evaluation points to the lowest. 5) Recommend Bidder with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

Method 3: Financial offer and quality	1) Score quality, rejecting all Bid offers that fail to score the minimum number of points for quality stated in the Bid data. 2) Score Bid evaluation points for financial offer. 3) Calculate total Bid evaluation points. 4) Rank Bid offers from the highest number of Bid evaluation points to the lowest. 5) Recommend Bidder with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Method 4: Financial offer, quality and preferences	1) Score quality, rejecting all Bid offers that fail to score the minimum number of points for quality stated in the Bid data. 2) Score Bid evaluation points for financial offer. 3) Confirm that Bidders are eligible for the preferences claimed, and if so, score Bid evaluation points for preferencing. 4) Calculate total Bid evaluation points. 5) Rank Bid offers from the highest number of Bid evaluation points to the lowest. 6) Recommend Bidder with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so. .

FUNCTIONALITY CRITERIA

The following criteria will be applied when bids are assessed for functionality:

Key aspect of criterion	Evaluation criterion	Remarks	Points	Awarded points
Site Agent or Foreman CV	Site Agent or Foreman has more than 5 years' experience in the field relevant to the project. (Attach CV)	Good	**30**	
	Site Agent or Foreman has more than 2 years' experience in the field relevant to the project. (Attach CV)	Fair	20	
	Site Agent or Foreman has no experience in the field relevant to the project. (Attach CV)	Poor	10	
Traceable project experience	Provided five traceable projects of similar nature in the past 10 years (Attach letters of appointments and completion certificates)	Good	**30**	
	Provided three traceable projects of similar nature in the past 10 years. (Attach letters of appointments and completion certificates)	Fair	20	

	Provided no traceable similar projects	Poor	10	
Proposed Work Programme	The Programme is presented in such a way that one is able to get the flow of tasks. (Attach programme)		**10**	
	The Programme is acceptable but lacks proper linkages of tasks. (Attach programme)		5	
	The Programme does not address the project needs. (Attach programme)		0	
NQF in Labour Intensive Programme (Attach certificates accredited by SETA)	7 5		**10** 5	
		Total	**80**	

NOTE: SERVICE PROVIDER THAT SCORES LESS THAN 70% ON FUNCTIONALITY WILL BE ELIMINATED.

a) Nquthu Local Municipality reserves the right to contact references submitted by the bidder.
b) Bids that do not achieve a minimum score of 70 points (out of 100) for functionality will not be evaluated further and will not proceed to the next stage of the Bid Evaluation process. Please note should any of the nominated staff be replaced, the successfully appointed service provider will be required to ensure that such replacements must have equivalent criteria as above and this need to be approved by Nquthu Local Municipality.

PREFERENCE POINT SYSTEM (STAGE 2)

Price and Preferential Points

PRICE AND PREFERENTIAL POINTS	**SCORE**
Price	80
Specific goals	20
Total	**100**

The specific goals allocated points in terms of this tender	**Number of points allocated (80/20 system)**	**Verification Documents**
Specific goal 1: Ownership (Max Points =10)		
Business owned more than 50% by black person	10	ID copy of Directors and CSD

Business owned less than 50% by black person	5	ID copy of Directors and CSD
Specific goal 2: RDP (Max Points =10)		
Promotion of enterprises located within: Nquthu municipal area	10	CSD and proof of municipal accounts/affidavit
Umzinyathi District Municipality	6	CSD and proof of municipal accounts/affidavit/proof of residence signed by ward Councilor
Province of KwaZulu Natal	4	CSD and proof of municipal accounts/affidavit/proof of residence signed by ward Councilor

NQUTHU LOCAL MUNICIPALITY

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

T2.1 List of Returnable Documents

The Bidder must complete the following returnable documents:

1 Returnable Schedules required only for Bid evaluation purposes

- Certificate of authority for joint ventures (where applicable)
- Compulsory Enterprise Questionnaire
- Record of Addenda to Bid Documents
- Proposed Amendments and Qualifications
- Schedule of Subcontractors
- Schedule of Plant and Equipment
- Schedule of the Bidder's Experience
- Municipal statement on Bidder's rates and taxes

2 Other documents required only for Bid evaluation purposes

- completed tender documents;
- a company profile;
- a copy of company registration certificate;
- certified ID copies of the company's shareholders, members, trustees, etc
- a valid tax clearance certificate and a compliant tax status;
- a proposed construction / works programme;
- letter confirming a signatory of authority
- CIDB registration certificate (5ME)
- an original SPECIFIC GOALS certificate or a certified copy;
- Signed JV agreement in case of a JV
- Municipal Statement for municipal Services or a signed lease agreement if leasing a property

3 Returnable Schedules that will be incorporated into the contract

- Preferencing Schedule (direct preferences)

4 Other documents that will be incorporated into the contract

5 The offer portion of the C1.1 Offer and Acceptance

6 C1.2 Contract Data (Part 2)

7 C2.2 Bills of quantities

Record of Addenda to Bid documents

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

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

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Bidder			

Certificate of Authority for Joint Ventures

This Returnable Schedule is to be completed by joint ventures.

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

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

Schedule of Proposed Subcontractors

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

If we are awarded a contract, we agree that this notification does not change the requirement for us to submit the names of proposed Subcontractors in accordance with requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.

We confirm that all subcontractors who are contracted to construct a house are registered as home builders with the National Home Builders Registration Council.

	Name and address of proposed Subcontractor	**Nature and extent of work**	**Previous experience with Subcontractor.**
1.			
2.			
3.			
4.			
5.			

Signed		Date	
Name		Position	
Bidder			

Schedule of Plant and Equipment

The following are lists of major items of relevant equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract if my/our Bid is accepted.

(a) Details of major equipment that is owned by and immediately available for this contract.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major equipment that will be hired or acquired for this contract if my/our Bid is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed		Date	
Name		Position	
Bidder			

Schedule of the Bidder's Experience

The following is a statement of similar work successfully executed by myself/ourselves:

Employer, contact person and telephone number.	Description of contract	Value of work inclusive of VAT (Rand)	Date completed

Signed		Date	
Name		Position	
Bidder			

Proposed amendments and qualifications

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

The Bidder's attention is drawn to clause F.3.8 of the Standard Conditions of Bid referenced in the Bid Data regarding the employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

Signed		Date	
Name		Position	

Bidder	

MBD 1

PART A

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE NQUTHU LOCAL MUNICIPALITY					
TENDER NO	**NQULM18/20232024**	CLOSING DATE:	**04 September 2023**	CLOSING TIME:	**12:00**
DESCRIPTION	**NQULM18/2023-2024 APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL**				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX

SITUATED AT

Nquthu Local Municipality Offices				
83 Mdlalose Street,				
Nquthu				
2470				
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:	**OR**	CSD No:	
SPECIFIC GOALS STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No	SPECIFIC GOALS STATUS LEVEL SWORN AFFIDAVIT	☐ Yes ☐ No	
[A SPECIFIC GOALS STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR SPECIFIC GOALS]				
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	**Supply Chain**	CONTACT PERSON	**Mr. M Nkala**
CONTACT PERSON		TELEPHONE NUMBER	**034 271 6100**
TELEPHONE NUMBER		FACSIMILE NUMBER	**034 271 6111**
FACSIMILE NUMBER		E-MAIL ADDRESS	**directortech@nquthu.gov.za**
E-MAIL ADDRESS			

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) OR ONLINE**

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 2015 3rd Edition) 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 EFILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.

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

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

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

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

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐
☐ YES NO 3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐
YES ☐ NO	
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? YES NO	☐ ☐
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? YES NO	☐ ☐
3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? YES NO	☐ ☐

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

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. **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 2

TAX CLEARANCE CERTFICATE REQUIREMENTS

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1. In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

2. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.

4. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6. Applications for the Tax Clearance Certificates may also be made via e-Filing. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state.
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 and/or take an oath declaring his/her interest.

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

3.1 Full Name: ……

3.2 Identity Number: ……

3.3 Company Registration Number: ……

3.4 Tax Reference Number: ……

3.5 VAT Registration Number: ……

3.6 Are you presently in the service of the state[] **YES / NO**

3.6.1 If so, furnish particulars.

……

……

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

3.7.1 If so, furnish particulars.

……

[] MSCM Regulations: "in the service of the state" means to be –

(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the national Assembly or the national Council of provinces;

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

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

3.8.1 If so, furnish particulars.

……

……

3.9 Are you, aware of any relationship (family, friend, other) between a bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.9.1 If so, furnish particulars.

……

……

3.10 Are any of the company's directors, managers, principal shareholders or stakeholders in service of the state? **YES / NO**

3.9.1 If so, furnish particulars.

……

……

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

3.11.1 If so, furnish particulars.

……

CERTIFICATION

I, THE UNDERSIGNED (NAME) ……

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

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

…….. ……
Signature Date

…… ……

Position Name of Bidder

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

1.2 To be completed by the organ of state

(*delete whichever is not applicable for this tender*).

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

b) The applicable preference point system for this tender is the 80/20 preference point system.

c) Either the 90/10 or 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

(a) Price; and

(b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS

PRICE	**80**
SPECIFIC GOALS	**20**
Total points for Price and SPECIFIC GOALS	**100**

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

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

2. DEFINITIONS

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

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

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

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

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

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

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

80/20 **or** **90/10**

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

80/20 **or** **90/10**

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

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

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

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

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

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

The specific goals allocated points in terms of this tender	Number of points allocated (90/10 system) (To be completed by the organ of state)	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Business owned more than 50% by black person		10		
Business owned less than 50% by black		5		
Promotion of enterprises located within:		10		
Nquthu municipal area		6		
Umzinyathi District Municipality		4		

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

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

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

i) The information furnished is true and correct;

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

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

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

(a) disqualify the person from the tendering process;

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

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

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

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

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

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

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

1. General Conditions

1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.

1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and specific goals

1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.

1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

LC = [1 - x / y] * 100

Where x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) at 12:00 on the date of advertisement of the bid as indicated in paragraph 4.1 below.

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

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

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

Description of services, works or goods	Stipulated minimum threshold
Valve products and actuators	**70%**
Water Meters	**40%**

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

YES		NO	

3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency at 12:00 on the date of advertisement of the bid.

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

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

Currency	**Rates of exchange**
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

LOCAL CONTENT DECLARATION

(REFER TO ANNEX B OF SATS 1286:2011)

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

IN RESPECT OF BID NO. .....

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

1 The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.

2 Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on http://www.thdti.gov.za/industrial development/ip.jsp. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

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

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that:

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

(c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

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

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

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

(d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SATS 1286:2011.

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

SIGNATURE: _____ **DATE:** _____

WITNESS No. 1 _____ **DATE:** _____

WITNESS No. 2 **DATE:** _____

CONTRACT FORM - RENDERING OF SERVICES

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SERVICE PROVIDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SERVICE PROVIDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

1. I hereby undertake to render services described in the attached bidding documents to (name of the institution) …… in accordance with the requirements and task directives / proposals specifications stipulated in Bid Number…….. at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the Purchaser during the validity period indicated and calculated from the closing date of the bid.

2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Bidding documents, *viz*
   - Invitation to bid.
   - Tax clearance certificate.
   - Pricing schedule(s).
   - Filled in task directive/proposal.
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011.
   - Declaration of interest.
   - Declaration of Bidder's past SCM practices.
   - Certificate of Independent Bid Determination.
   - Special Conditions of Contract.

   (ii) General Conditions of Contract; and
   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the services specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

WITNESSES

1 ……

.

MBD 7.2

CONTRACT FORM - RENDERING OF SERVICES

PART 1 (TO BE FILLED IN BY THE PURCHASER /THE MUNICIPALITY)

1. I…….…… in my capacity as ……..……

   accept your bid under reference number …… dated …… for the rendering

   of services indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating service delivery instructions is forthcoming.

3. I undertake to make payment for the services rendered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice.

DESCRIPTION OF SERVICE	PRICE (ALL APPLICABLE TAXES INCLUDED)	COMPLETION DATE	SPECIFIC GOALS STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

4. I confirm that I am duly authorised to sign this contract.

SIGNED AT …… ON …….....

NAME (PRINT) ……..

SIGNATURE ……..……

OFFICIAL STAMP

	WITNESSES 1 ……. 2 …..…….

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

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

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

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

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

Item	Question	Yes	No
4.1	**Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?** **(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *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 12 of 2004)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		

Item	Question	Yes	No
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
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 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.

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder)

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

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

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

   (a) has been requested to submit a bid in response to this bid invitation;

   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or 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 the contract.

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

…….. ……

Signature Date

…….. ……

Position Name of Bidder

[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.

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

PROPOSED SUBCONTRACTION WORK (30% of the project to be subcontracted to local contractors)

The following work or projects will be subcontracted to local contractors for this project and is not limited to the following:

Project1: _____

Project2: _____

Project3: _____

Project4: _____

Project5: _____

Project6: _____

Project7: _____

……... …….

Signature Date

……... …….

Position Name of Bidder

NQUTHU LOCAL MUNICIPALITY

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of:

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

The Bidder, identified in the offer signature block, has examined the documents listed in the Bid data and addenda thereto as listed in the returnable schedules, and by submitting this offer has accepted the conditions of Bid.

By the representative of the Bidder, deemed to be duly authorized, signing this part of this form of offer and acceptance, the Bidder offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

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

. . . . . Rand

(in words); R . . . . . (in figures)

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the Bidder before the end of the period of validity stated in the Bid data, whereupon the Bidder becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature . . . . . Date . . . . . .

Name . . . . . .

Capacity . . . . . .

for the Bidder

(Name and organization) . . . . . address of . . . . . .

Name and signature of witness . . . . . .

. . . . . .

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the Bidder'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 Bidder's offer shall form an agreement between the employer and the Bidder 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 C1: Agreements and contract data, (which includes this agreement)
Part C2: Pricing data Part C3: Scope of work.
Part C4: Site information and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the Bid data and any addenda thereto as listed in the Bid schedules as well as any changes to the terms of the offer agreed by the Bidder and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The Bidder 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. Failure to fulfill 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 Bidder receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the Bidder (now contractor**)** within five working 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 . . . . . Date . . . . . .

Name . . . . . .

Capacity . . . . . **for the**

Employer THE MUNICIPAL MANAGER
NQUTHULOCAL MUNICIPALITY
83 Mdlalose Street
NQUTHU
3135

Name and . . . . . signature of witness
Date . . . . . .
. . . . . .

Schedule of Deviations

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

4 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

5 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

By the duly authorised representatives signing this agreement, the employer and the Bidder agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the Bid data and addenda thereto as listed in the Bid schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Bidder 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 Bid documents and the receipt by the Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

C1.2 Contract Data

The General Conditions of Contract for Construction Works (2015) published by the South African Institution of Civil Engineering, is applicable to this contract Drawings. Copies of these conditions of contract may be obtained from the South African Institution of Civil Engineering (tel 011-805 5947).

The 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 the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

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.

	The variations to the General Conditions of Contract are:
4.5.2	Replace the term “Safety” with “Occupational Health and Safety”
49.6.1 to 4.9.6.3	Replace the term “Bank” with “Bank or Insurance Company”
55.1.8	Replace sub-clause with: The Contractor or anyone on his behalf or in his employ would pay, offer or offer as payment to any person in the employ of the Employer, or in the employ of the Engineer, a gratuity or reward or commission.
42	**The additional clauses to the General Conditions of Contract are:** Extensions of time in respect of clause 42 in respect of abnormal rainfall shall be calculated using the following formula for each calendar month or part thereof: $V = (Nw – Nn) + \frac{(Rw – Rn)}{X}$ Where: V = Extension of time in calendar days in respect of the calendar month under consideration. Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded. Nn = Average number of days in the relevant calendar month , as derived from existing rainfall records, as stated in the Site Information, on which a rainfall of 20mm or more has been recorded for the calendar month. Rw = Actual average rainfall in mm recorded for the calendar month under consideration. Rn = Average rainfall in mm for the calendar month as derived from existing rainfall records as stated in the Site Information. For purposes of the Contract Nn, Rn, X and Y shall have those values assigned to them in the Appendix and/or the Specification. If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.

The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to abnormal rainfall.

Extensions of time for part of a month shall be calculated using pro rata values of Nn and Rn. This formula does not take account flood damage which could cause further or concurrent delays and will be treated separately as far as extension of time is concerned.

The factor (Nw – Nn) shall be considered to represent a fair allowance for variations from the average in the number of days during which rainfall exceeds 10 mm. The factor (Rw-Rn) shall be considered to represent a fair allowance for variations from the average in the number of days during which the rainfall did not exceed 10 mm but wet conditions prevented or disrupted work.

For the purpose of applying the formula, accurate rain gauging shall be taken at a suitable point on the Site and the Contractor shall at his own expense, take all necessary precautions to ensure that rain gauges cannot be interfered with by unauthorized persons.

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 apply to 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 in elementary 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 administer or 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.

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 EPWP. 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 worker may 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 the tasks 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 thirty minutes 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 is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

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 on the 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 of this 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 of employment –

(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 duration of the contract;
(d) the worker's rate of pay and how this is to be calculated; (e) the training that the worker will receive during the 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 of the 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 envelope and 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 worker within 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 actually paid to the worker; or
(f) 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 their employer 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 fair procedure.
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 who wishes 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 of an 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 terminated the 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.

Part 1: Contract Data completed by the Employer

Clause	
1.1.14 1.2.2	The name of the Employer is the: NQUTHULOCAL MUNICIPALITY The address of the Employer is: Telephone: 034 271 6100 Fax : 034 271 6111 Address (physical): NQUTHU LOCAL MUNICIPALITY, Address (postal): 83 Mdlalose Street, Nquthu
1.1.15 1.2.2	The official representing the employer (Client) The Municipal Manager
1.6 and 38	The special non-working days are public holidays, Saturdays, Sundays and the days on which the contractor grants the majority of his permanent workforce leave around the 16th December and the first Monday of the subsequent year.
2.3	The Engineer is required to obtain the specific approval of the Employer before executing any of the following functions or duties: 1. Nominating the Engineer's Representative in terms of Clause 2.4. 2. Delegation of Engineer's authority in terms of Clause 2.7. 3. Providing consent for subcontracting part of the contract in terms of Clause 6.2. 4. The issuing of further drawings or instructions in terms of Clause 13.1 5. The issuing of instructions for dealing with fossils and the like in terms of Clause 15. 6. Authorizing the Contractor to repair and make good excepted risks in terms of Clause 32.2.2. 7. The issuing of a variation order in terms of Clause 36.2. 8. Issuing of instructions to carry out work on a day work basis in terms of Clause 37.1.4. 9. Granting permission to work during non-working times in terms of Clause 38.1. 10. Suspend the progress of the works in terms of Clause 39.1. 11. The issuing of an instruction to accelerate progress in terms of Clause 40.3. 12. The reduction of a penalty for delay in terms of Clause 43.2. 10. The determination of additional or reduced costs arising from changes in legislation in terms of Clause 46.4. 11. The giving of a ruling on a contractor's claim in terms of Clause 48.5. 12. The agreeing of an extension to the 28 period in terms of Clause 48.5.1. 13. The inclusion of credits in the next payment certificate in terms of Clause 48.5.2. 14. The agreeing of the adjustment of the sums for general items in terms of Clause 50.1.
7	The time to deliver the Form of Guarantee within 14 days of the Commencement Date. The Form of Guarantee is to contain the wording of the document included in Clause.3. The liability for the guarantee shall be for **10% of the contract amount.**
10	The Works are to be commenced within **14 days** of the Appointment Date.
12.2	The Works programme is to be delivered within **14 days** of the Commencement Date.
35.1.1.2.2	The value of the materials supplied by the Employer to be included in the insurance sum is **R0-00**
35.1.1.2.3	The amount to cover professional fees for repair or reinstatement of damage to the works to be included in the insurance sum is **R0-00**

35.1.3	The limit of liability insurance is **10% of the contract amount** per claim.
35.1.4	No additional insurance is required.
37.2.2.3	The percentage allowance to cover overhead charges is **15%**.
42.1 1.1.13	The works shall be completed within **a period determined by the Contractor considering their resources** exclusive of year end break.
43.1	The penalty for failing to complete the Works is **1.5% of the contract amount per month.**
46.2	The value of the payment certificates is to be adjusted in accordance with the Contract Price Adjustment Schedule, where: The value of "x" is 0,15 a = 0.15 (labour) b = 0.20 (plant) c = 0.55 (materials) d = 0.10 (fuel) The urban area nearest the site is Nquthu.
49.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%
49.3	The percentage retention on amounts due to the Contractor is **10% of the contract amount.**
49.6	A Retention Money Guarantee is **permitted**.
53.1	The Defects Liability Period is **6 months**.
58.2	Dispute resolution is to be my means of adjudication
58.4	Disputes are to be referred for final settlement to arbitration.

Part 2: Data provided by the Contractor

Clause	
1.8 1.2.2	The name of the Contractor is. . . . . . The address of the contractor is: Telephone: . . . . . . Facsimile: . . . . . . Address (physical): . . . . Address (postal): . . . .

46.3 The variation in cost of special materials is:

Special material	**Unit on which variation will be determined**		**Price for base month ex factory, excluding transport, labour or any other costs.**
	Containers	Delivered in bulk	

*State unit in appropriate column

NQUTHU LOCAL MUNICIPALITY

C1.3 Form of Guarantee

Contract No: ……. Description ……

WHEREAS **The NQUTHU LOCAL MUNICIPALITY** (hereinafter referred to as the Employer") entered into, a Contract with:

. . . . . .
.

. . . .

(hereinafter called "the Contactor") on the . . . . . day of . . . . . .20. . . .

. . .,

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

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

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

1. The Employer shall, without reference and / or notice to us, have complete liberty of action to act in any manner authorized and/or contemplated by the terms of the said Contract, and/or to agree to any modifications, variations, alterations, directions or extensions of the completion date of the works under the said Contract, and that its rights under this guarantee shall in no way be prejudiced nor our liability hereunder be affected by reason of any steps which the Employer may take under such Contract, or of any modification, variation, alterations of the completion date which the Employer may make, give, concede or agree to under the said Contract.

2. This guarantee shall be limited to the payment of a sum of money.

3. The Employer shall be entitled, without reference to us, to release any guarantee held by it, and to give time to or compound or make any other arrangement with the Contractor.

4. This guarantee shall remain in full force and effect until the issue of the Certificate of Completion in terms of the Contract, unless we are advised in writing by the Employer before the issue of the said Certificate of his intention to institute claims, and the particulars thereof, in which event this guarantee shall remain in full force and effect until all such claims have been paid or liquidated.

5. Our total liability hereunder shall not exceed the Guaranteed Sum of . . . . . .

   . . . . . .Rand (in words); R . . . . . .

   . . . . . (in figures) ……

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

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

. . . . . .

. . .

. . . . . .

. . .

. . . . . .

. . .

. . . . . .

. . .

IN WITNESS WHEREOF this guarantee has been executed by us at . . . . . .
. . . . on this . . . . . day of . . . . . 20 . . . .
. . . .

Signature . . . . . .

Duly authorized to sign on behalf of . . . . . .
. .

Address . . . . . .
. . . . .

. . . . . .
. .

. . . . . .
. . . .
As witnesses:

1 . . . . . .

2 . . . . . .

NQUTHU LOCAL MUNICIPALITY

C2.1 Pricing Instructions

1 Measurement and payment shall be in accordance with the relevant provisions of clause 8 of each of the SABS 1200 Standardised Specifications for Civil Engineering Construction referred to in the Scope of Work. The Preliminary and General items shall be measured in accordance with the provisions of SABS 1200-A, *General.*

2. The units of measurement described in the Bills of Quantities are metric units. Abbreviations used in these Bills of Quantities are as follows:

% = percent h = hour
ha = hectare kg = kilogram
kl = kilolitre
km = kilometre km-pass
= kilometre-pass kPa
= kilopascal
kW = kilowatt
l = litre
m = metre mm = millimetre m²
= square metre m²-pass =
square metre-pass m³ = cubic metre
m³-km = cubic metre-kilometre
MN = meganewton
MN.m = meganewton-metre
MPa = megapascal
No. = number
Prov sum = Provisional sum
PC sum = Prime Cost sum
R/only = Rate only sum =
lump sum t = ton
(1000 kg) W/day =
Work day

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

4. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described 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 will be used as a basis for assessment of payment for additional work that may have to be carried out.

5 It will be assumed that prices included in these Bills 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 Bids. (Refer to www.stanza.org.za or www.iso.org for information on standards)

6 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 Bided such items

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

8. The quantities set out in these Bills 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.

9. 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.

10. The short descriptions of the items of payment given in these Bills 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.

11. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the SABS 1200 Standardised Specifications.

12. Those parts of the contract to be constructed using labour-intensive methods have been identified in the scope of works. **Tenderers must price such works so as to allow for Labour-intensive construction methods**. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract.

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

NQUTHU LOCAL MUNICIPALITY

C2.2 Bill of Quantities

NQUTHU LOCAL MUNICIPALITY

C3: SCOPE OF WORK

CONTENTS

C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the SABS 1200 Standard Specifications.

Although not bound nor issued with this document, the following Parts of the Standard specifications shall form part of this contract where relevant:

SABS 1200	A	:	General
SABS 1200	AB	:	Engineers Office
SABS 1200	C	:	Site Clearance
SABS 1200	D	:	Earthworks
SABS 1200	DB	:	Earthworks (Pipe Trenches)
SABS 1200	DM	:	Earthworks (Roads and Subgrade)
SABS 1200	GA	:	Concrete (Small works)
SABS 1200	LB	:	Bedding (Pipes)
SABS 1200	LE	:	Storm water Drainage
SABS 1200	ME	:	Sub Base
SABS 1200	MF	:	Base
SABS 1200	MM	:	Ancillary Roadworks
SABS 1200	AH	:	General Structural
SABS 1200	GK	:	Gabions and Pitching
SABS 1200	G	:	Concrete Structural

SABS 1200	MH	:	Asphalt Base and Surfacing
SABS 1200	GB	:	Ordinary Building
SABS 1200	H	:	Structural Steelworks
SABS 1200	HB	:	Cladding and Sheeting
SABS 1200	MK	:	Kerbing and Channelling

The following SANS specifications are also referred to in this document and the contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

SANS 10396: 2003: Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures

SANS 1914-1 to 6 (2002) : Targeted Construction Procurement

SANS 1921 – 1 (2004) : Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works and where accommodation of traffic is involved:

SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts; and Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

3.2 PROJECT SPECIFICATIONS

STATUS

The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

Part A contains a general description of the works, the site and the requirements to be met.

Part B contains variations, amendments and additions to the Standardized Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

- **A : GENERAL PS-1 PROJECT DESCRIPTION**

This contract covers the supply of all material, labour, plant and equipment for the construction of Ndatshana Community Hall: Ward 18 in the Nquthu Municipal area under UMzinyathi District Municipality. The work includes the construction of a hall, Toilet , Clear vu fencing, Borehole, security house, parking and provisional access road.

Included in this contract are, inter alia, the following:

(a) Site Clearance: General clearance of the area of the works.
(b) Bulk earthworks: Cut to fill, Cut of drains, storm water drainage, Topsoil and road works.
(c) Hall: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing, Rainwater Goods, Painting and Tiling.

(d) Toilets: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing
(e) Guard house: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing, Rainwater Goods, Painting and Tiling.
(f) Parking: Earthworks, G2 Crusher run, prime and paving surfacing.
(g) Such other works as may be deemed by Engineer for the completion of the project.
(h) Borehole

PS-2 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

PS-2.1 General

The Contractor is referred to SANS 1921: 2004 parts 1, 2, 3 and 5: Construction and Management Requirements for Works Contracts. This specification shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

PS-2.2 Quality Assurance (QA) (SANS 1921 – 1: 2004 clause 4.4)

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

PS-2.3 Management and disposal of water (SANS 1921 – 1: 2004 clause 4.6)

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

PS-2.4 Disposal of spoil or surplus material (SANS 1921 – 1: 2004 clause 4.10)

The Contractor shall dispose all surplus and unsuitable material in designated spoil areas within 1,5 km from the site as pointed out to the Contractor.

PS-2.5 Testing (SANS 1921 – 1: 2004 clause 4.11)

PS-2.5.1 Process control

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer.

The Contractor may establish his own laboratory on site or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

PS-2.5.2 Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

PS-2.6 Survey beacons (SANS 1921 – 1: 2004 clause 4.15)

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrically beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

PS-2.7 Existing Services (SANS 1921 – 1: 2004 clause 4.17)

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced. The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

PS-2.8 Management of the environment (SANS 1921 – 1: 2004 clause 4.19)

The Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of constructing the works.

The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

(b) Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps- to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

PS-2.9 Overhaul

No payment will be made for overhaul on this contract unless provision is made therefore in specific items.

PS-2.10 Security

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

PS-3 CONSTRUCTION PROGRAMME

PS-3.1 Preliminary programme

The Contractor shall include with his tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit tenders for an alternative Time for Completion in addition to a tender based on the specified Time for Completion. Each such alternative tender shall include a preliminary programme similar to the programme above for the execution of the works, and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

PS-3.2 Programme in terms of Clause 5.6 of the General Conditions of Contract (2015)

It is essential that the construction programme, which shall conform in all respects to Clause

5.6 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the tender shall be used as basis for this programme. The Contractor's attention is also drawn to clause 5.7 of the General Conditions of Contract 2015.

PS-4 SITE FACILITIES AVAILABLE

PS-4.1 Contractor's camp site and depot (SANS 1921 – 1: 2004 clause 4.14)

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.

PS-4.2 Accommodation of Employees

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

No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.

PS-4.3 Power supply, water and other services

The Contractor shall make his own arrangements concerning the supply of electrical power, water and all other services. No direct payment will be made for the provision of electricity, water and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required, or in the Contractor's preliminary and general items as the case may be.

PS-5 SITE FACILITIES REQUIRED

PS-5.1 A construction sign board with details of the project and the employer.

A desk and chair for engineer to be located in the contractor’s office. Desk must be of sufficient space to be able to view drawings of A1 size with chairs able to sit at same height as desk.

- **PS-6 REQUIREMENTS FOR ACCOMMODATION OF TRAFFIC**

PS-6.1 General

The Contractor will be responsible for the safe and easy passage of public traffic past and on sections of roads of which he has occupation or where work has to be done near traffic.

PS-6.2 Basic Requirements

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.
The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective and that courtesy is extended to the public at all times.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

The Contractor may not commence constructional activities affecting existing roads before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations.

PS-6.3 Payment

The Contractor's tendered rates for the relevant items in the Bill of Quantities shall include full compensation for all possible additional costs which may arise from this, and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered.

PS-7 OCCUPATIONAL HEALTH AND SAFETY (SANS 1921 – 1: 2004 clause 4.14)

PS-7.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2003 issued on 18 July 2003 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in
SECTION 6: FORMS TO BE COMPLETED BY SUCCESSFUL TENDERER.

PS-7.2 Health and Safety Specifications and Plans not to be submitted at tender stage

(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.

The following items will require special attention

1. **Ripping of earthworks material.**
2. **Loading and transporting of bulk works material to spoil and fill.**
3. **Carry and placing of fencing and building material.**
4. **Operating of plant within the community area.**

5. **Accommodation of traffic and protections of vehicles from construction.**
6. **Protecting pedestrians and local traffic from the work area**

b) Tenderer's Health and Safety Plan

The Tenderer shall submit with his tender his own documented Health and Safety Plan he proposes to implement 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 Regulations 7 to 28;

(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 (*Regulation 5)*;
(v) 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;
(vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 6 and other applicable regulations; and
(vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2003.

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.

- **PS-7.3 Cost of compliance with the OHSA Construction Regulations**

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract. Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

Items that may qualify for remuneration will be specified in the Safety Specifications included or in the Project specifications.

PS-8 ADVERSE WEATHER CONDITIONS

In terms of Clause 5.12.2.2 of General Conditions of Construct 3rd Edition (2015), extension of time will be considered for **abnormal rainfall**. The numbers of days per month on which work is expected not to be possible as a result of **normal rainfall**, and for which the Contractor shall make provision in his tendered rates, prices and programme, are listed in Table PS-8.1 below. Only the number of days lost as a result of adverse weather conditions, exceeding the number of days listed in Table PS 8.1, will qualify for consideration of extension of time.

During the execution of the Works, the Engineer's Representative will certify a day lost due to abnormal rainfall and adverse weather conditions only:

- If no work was possible on the relevant working day on any item which is on the critical path according to the latest approved construction programme; or
- If less than 30% of the work force and plant on site could work during that specific working day.

Extension of time as a result of abnormal rainfall and adverse weather conditions shall be calculated monthly being equal to the number of working days certified by the Engineer's Representative as lost due to rainfall and adverse weather conditions, less the number of days allowed for as in Table PS-8.1, which could result in a negative figure for certain months. The total extension of time as a result of abnormal climatic conditions for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil."

TABLE PS-8.1: EXPECTED NUMBER OF WORKING DAYS LOST PER MONTH DUE TO NORMAL RAINFALL.

MONTH	**Expected number of working days lost as result of normal rainfall**
JANUARY	**5 5*
FEBRUARY	*4*
MARCH	*1*
APRIL	*1*
MAY	*1*
JUNE	*1*
JULY	*1*
AUGUST	*2*
SEPTEMBER	*3*
OCTOBER	*4*
NOVEMBER	*5*
DECEMBER	
TOTAL	*32 days*

(*Based on information obtained from the Weather Bureau, Department of Environment Affairs, Margate. The average monthly rainfall figures quoted, are included for information only, and shall be used as a guideline when taking into consideration calculation of extension of time. The number of working days lost for December and January allows for the builders' holidays from 16 December to 5 January.)*

If an extension of time is granted, the Engineer may, at his entire discretion, grant such extension.

B: AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS

INTRODUCTION

The following variations and additions to the SABS 1200 Standard Engineering Specification will be valid. The prefix "PS-B" indicates an amendment to Part B, "PS-C" to Part C, etc.

All earthworks quantities are to be determined on site and agreed between the Contractor and the Engineer. All material excavated from site shall be (a) carted to tip, or (b) re-used on site as fill. It is anticipated that the in-situ soil conditions are of adequate strength to avoid the need to undertake sub-grade improvements. The Engineer shall determine which of the above 2 options are to be carried out should un-favourable formation conditions arise. All fill material to be re-used shall, however, be suitable for fill and shall not be contaminated by any organic matter.

PS-A GENERAL

PS-A.1 WIND BLOWN MATERIAL

The Contractor shall ensure that dust or other windblown material from the site does not affect adjoining properties nor cause hazardous conditions on the site, and shall make allowance in the rate tendered under Part A: P & G Time related, for sweeping, sprinkling with water or other measures necessary to fulfill this requirement.

PS-A.2 PROVIDE AS-BUILT PLANS

The Tenderer shall include in his rate in the Schedule of Quantities covering the submission of as-built data.

The Contractor shall supply the Engineer with:

(a) A list of surveyed co-ordinates and levels of cable ducts and all services proved during the contract.

(b) A list of surveyed invert and cover levels, and co-ordinates of all catch pits and manholes constructed or modified during the course of the contract.

(c) Final platform levels

A hard copy as well as a disk with a .dxf file will be required.

Any information in the possession of the Contractor which is necessary for the Engineer's Representative to complete his "as built" records must be submitted to the Engineer before a final payment certificate and certificate of completion will be issued.

PS-C SITE CLEARANCE

PS-C.1 SCOPE

The work required under this section is for the clearing and grubbing of the platform prism.

PS-D EARTHWORKS

PS-D.1 STOCKPILE AREAS

All unsuitable excavated material shall be spoiled to tip. No stockpile handling shall be paid under this Contract.

PS-D.2 EARTHWORKS: GENERAL

Tenderers are to note that the unit of measurement for bulk excavation in all material to fill, spoil and rock-fill areas shall be the cubic metre (m^3), and that the rate tendered shall be inclusive of all work or operations as is defined in SABS 1200 D of the "Standard Engineering Specification.

PS-D.3 TOLERANCES

Clause D.3 shall be amended to read as follows:-

The allowable tolerances shall be -

(a) the design angle ± 2 degrees for the angle of the cut or fill slope;

(b) not less than the design width, nor more than 300 mm greater than the design width for the transverse horizontal embankment width at any level; and

(c) For the formation, the Contractor will be required to place level pegs longitudinally at 5 m intervals on the platform construction contract and elevation tolerances shall be taken on a section of the works. (When a portion of the works is less than 500 m^2, one tolerance reading per 10 m^2 shall be taken).

In any section the average of the elevations taken shall be such that the average thickness of the succeeding layer or layers above the formation shall be not less than that specified/nor greater than that specified plus 20 mm.

The standard deviation of the differences between the actual and design levels shall not be greater than 50 mm.

PS-DB EARTHWORKS FOR TRENCHES

PS-DB.1 COMPACTION OF TRENCHES

Further to clause DB.5.6.7, Tenderers are to note that in all cases the compaction of the trench bottom and the trench backfill shall be to 95% Mod. A.A.S.H.T.O.

An extra-over item has not been included in the Schedule of Quantities and Tenderers shall include for these costs under the relevant excavate and backfill items.

PS-DB.2 EXCAVATION FOR OPEN DRAINS

The excavation for open drains will be measured as cubic meter (m^3) and can be lined or unlined. The rate tendered shall include for all labour and plant to excavate the drain in soft material, trim to the correct profile and grade, to compact the drain.

PS-FF FENCING

PS-FF.1 ClearVU FENCING

The fencing to be used must comply with the specification of heavy duty. Concrete strength of 35 MPa and mass per meter of at least 292kg. The height of the wall must be 2,4m and installed to manufacturer specification.

PS-FF.2 VEHICULAR GATE

The gate must be a heavy duty, galvanised, farm style gates with a total width of prescribe in drawings details and to height of fence. The tender amount shall include for all labour, plant and material to supply and install the gate to the Manufacturers specification.

PS-FF.3 PEDESTRIAN GATE

The gate must be a heavy duty, galvanised, farm style gate with a total width as prescribe drawings details and to height of fence. The tender amount shall include for all labour, plant and material to supply and install the gate to the Manufacturers specification.

A1. **ELECTRICITY**

General: The Supply Authority is Eskom.

SUPPLY:

Low Voltage Supply:

The Low Voltage Supply is 400V, 50Hz, 3-Phase, 4-Wire. It must be assumed that the voltage is ± 10% within the nominal. This shall apply for the buildings to be installed with electricity.

A2. DISTRIBUTION

General: Distribution boards shall be flush mounted and shall to be located where indicated.

BOARD:

Positions as indicated. Electrical Contractor to allow 40% Spare way on all Distribution Boards.

The exterior colour finish of these boards shall be off-white. The inside panel shall be painted as follows:

 Non Essential - Electric Orange

The Electrical Contractor shall provide shop drawings and shall only manufacture the Distribution Boards upon written approval from the Electrical Engineer. In addition to the statutory labels as specified in the General Specification, the Contractor shall allow to supply and install engraved labels onto the board with the following information:

(a) Supply db information (e.g. db-B fed from db-A)

(b) Feeder cable size (e.g. 95mm² 4 core cable)

(c) Relative cascading circuit breakers (if applicable)

(d) Respective db's fault level.

.2 **Schedule of Equipment on DB-A (5kA Fault Level)**

1 x Set of Surge Arrestors (4-off)
1 x 60A TP Isolator
2 x 5A SP MCB feeding PEC circuit controlling
2 x 20A DP Contactor with 230V coil feeding:

4 x 15A SP MCB(Light cct A1-A4)
6 x 10A SP MCB's(Light cct's A5-A10)

2 x 60A SP MCB's feeding:

2 x 60A DP E/L isolating units protecting:

7 x 20A SP MCB's(Socket cct's A11-A17)
2 x 20A SP MCB's(Dedicated Socket cct's A18-A19)
1 x 30A SP MCB's (Geyser cct's A20)(Not applicable)

Prefitted Space for:

5 x TP MCB's

8 x SP MCB's

A3. BUS-BARS

General:

The onus rests on the Electrical Contractor to ensure that the Bus-bars.
SWITCHGEAR: and switchgear shall be adequately rated and suitably supported. Suitable terminal are to be provided for incoming and outgoing cables. Switchgear shall be of the type Merlin Gerin or similar approved.

B1. LV CABLES:

General:

All cables shall be copper cored PVC SWA/ECC PVC in accordance with SABS 1507.The Contractor shall allow to supply and install the following cables fully in accordance with the General Specification.

Schedule of LV Cable:

Non-Essential

Eskom DB-A 10mm² 4 Core

B2. LV CABLE

The cable terminations shall be in accordance with the Code of Practice for the

TERMINATIONS: Wiring of Premises SANS 0142 as amended. The Contractor shall allow to supply and install cable identification tags to both cable ends. Both the source distribution board and feeder distribution board details shall be engraved on the cable tags.

B3. CABLE TESTS:

All cables shall be tested in accordance with SANS 1507.

B4. CABLE ROUTES:

All cable routes shall be confirmed with the Engineer on site prior to installation thereof.

B5 CABLE SLEEVES

All cable sleeves shall be installed by the Contractor as detailed on the drawings. All sleeves shall be left with at least one draw-wire per sleeve. The draw-wires shall be included in the rates for the sleeves as specified in the Bill of Quantities.

The Contractor shall ensure that the sleeves are installed timeously and in the correct positions as shown.

B6. CABLE MANHOLES:

The Contractor shall allow building brick manholes for the cables as detailed. The metal covers shall be cast iron manufactured covers. The Contractor shall ensure that the manholes are installed timeously and in the correct positions as shown.

B7. TRENCHING AND

The Contractor shall allow for trenching, backfilling, dispose of surplus material.

BACKFILLING

Trenches along the cable routes as shown and to backfill these trenches once the cables are installed. Before backfilling the Contractor shall contact the Engineer for inspection of the cables. The trenching and backfilling shall be in accordance with the General Specification Part 2E.

Included in the rate for trenching and back filling, the Contractor shall allow for cable marker tape along the cable route at a depth of 300mm below ground level.

B8 CABLE MARKERS:

Cable Markers shall be provided along LV Cable routes. Cable Markers shall consist of Concrete Blocks in the shape of truncated pyramids, approx. 300mm high, 150mm x 150mm at the top and 250mm x 250mm at the bottom.

Brass plates shall be cast into the top of the blocks in such a manner that they cannot be prized loose. The wording "ELECTRIC CABLE/ELEKTRIESE KABEL" shall be stamped on the brass plates as well as the direction arrows and the cable voltage rating.

Cable Markers shall be installed on the surface along all the underground cable routes and shall project 35mm above normal ground level unless the projected Markers could be a hazard to pedestrian or other traffic in which case they shall be installed flush with the surface.

Cable Markers shall be installed at the beginning and end of the cable run (e.g. Where a cable enters a substation or building), at all changes of direction, above cable pipe entries and exists and at intervals not exceeding 50m along the cable route.

C1. NATURE OF

The Community Hall is a single storey building.

BUILDING
The building generally consists of brickwork and concrete construction, with suspended and rhino board ceilings.

C2 LUMINAIRES:

General:

The Contractor is responsible for the purchase, delivery and safe storage of all Luminaires required for this project. The Contractor shall confirm with the Electrical Engineer the exact numbers and type for each specific luminaire before placing confirming orders with the Suppliers. All luminaires supplied shall comply with the following SABS Specifications when applicable:

Luminaires - Fixed general purpose	-	SABS IEC 60598–2–1 to 25
Flood Lighting	-	SABS 1279
Interior Discharge Lamps	-	SABS 1278
Interior Fluorescent Lamps	-	SABS 1119
Electrical Safety of Luminaires	-	SABS 1464 1 – 25

2 PROCUREMENT

The following stages of evaluation will be carried out in the evaluation of tenders:

Stage 1: Administrative Compliance
Stage 2: Local Content
Stage 3: Mandatory Requirements
Stage 4: Functionality Criteria
Stage 5: Preference Point System

ADMINISTRATIVE COMPLIANCE (STAGE 1)

All the bids will be evaluated against the administrative responsiveness requirements as set out in the list of returnable documents (Part T 2).

LOCAL CONTENT (STAGE 2)

The following stipulated minimum thresholds for local content will be applicable.

Description of services, works or goods	Stipulated minimum threshold
Bricks	70%
Cement	90%
Doors and Windows	50%
Paving Bricks	15%
Roof	5%

MANDATOR REQUIREMENTS (STAGE 3)

The following are considered mandatory criteria and failure to submit the required documentation will render the tender non-complaint:

Mandatory criteria	Supporting evidence
CIDB Grading of 4 GBPE	Valid certified CIDB grading certificate
Project Manager with a NQF Level 7 or higher in Civil engineering	Certified copy of qualification
Site Agent with a NQF Level 5 or higher in Civil engineering	Certified copy of qualification
Foreman with a NQF Level 4 or higher in Civil engineering	Certified copy of qualification
Safety Officer registered with SACPCMP as a Construction Health and Safety Officer	Certified registration SACPCMP certificate
Company or JV or Sub-Contractor or Nominated Supplier Experience – Proof of relevant projects completed in the past 10 years of comparable scope and similar type - Refurbishment of water or wastewater treatment works exceeding a value of R 5 million.	Signed agreement/contract between bidder and subcontractor, Final Approval or Completion Certificate of the relevant projects completed within the last 10 years to be attached. (Certificate must display detailed scope, be signed by the Client, and contain the Client's contact details. If experience presented is for a Subcontractor, the Subcontractor's Company Profile and a signed)

FUNCTIONALITY EVALUATION (STAGE 4)

The functional evaluation will be done as outlined below. Should a Bidder not achieve the minimum specified points (70) for functionality then the Bidder will be regarded as non-responsive and not be considered for the next evaluation stages and will be disqualified.

FUNCTIONALITY CRITERIA

The following criteria will be applied when bids are assessed for functionality:

Key aspect of criterion	Evaluation criterion	Remarks	Points	Awarded points
Site Agent or Foreman CV	Site Agent or Foreman has more than 5 years' experience in the field relevant to the project. (Attach CV)	Good	**30**	
	Site Agent or Foreman has more than 2 years' experience in the field relevant to the project. (Attach CV)	Fair	20	
	Site Agent or Foreman has no experience in the field relevant to the project. (Attach CV)	Poor	10	
Traceable project experience	Provided five traceable projects of similar nature in the past 10 years (Attach letters of appointments and completion certificates)	Good	**30**	
	Provided three traceable projects of similar nature in the past 10 years. (Attach letters of appointments and completion certificates)	Fair	20	
	Provided no traceable similar projects	Poor	10	
Proposed Work Programme	The Programme is presented in such a way that one is able to get the flow of tasks. (Attach programme)		**10**	
	The Programme is acceptable but lacks proper linkages of tasks. (Attach programme)		5	

	The Programme does not address the project needs. (Attach programme)		0	
NQF in Labour Intensive Programme (Attach certificates accredited by SETA)	7 5		**10** 5	
		Total	**80**	

NOTE: SERVICE PROVIDER THAT SCORES LESS THAN 70% ON FUNCTIONALITY WILL BE ELIMINATED.

c) Nquthu Local Municipality reserves the right to contact references submitted by the bidder.

d) Bids that do not achieve a minimum score of 70 points (out of 100) for functionality will not be evaluated further and will not proceed to the next stage of the Bid Evaluation process. Please note should any of the nominated staff be replaced, the successfully appointed service provider will be required to ensure that such replacements must have equivalent criteria as above and this need to be approved by Nquthu Local Municipality.

PREFERENCE POINT SYSTEM (STAGE 2)

Price and Preferential Points

PRICE AND PREFERENTIAL POINTS	**SCORE**
Price	80
Specific goals	20
Total	**100**

The specific goals allocated points in terms of this tender	**Number of points allocated (80/20 system)**	**Verification Documents**
Specific goal 1: Ownership (Max Points =10)		
Business owned more than 50% by black person	10	ID copy of Directors and CSD
Business owned less than 50% by black person	5	ID copy of Directors and CSD
Specific goal 2: RDP (Max Points =10)		
Promotion of enterprises located within: Nquthu municipal area	10	CSD and proof of municipal accounts/affidavit
Umzinyathi District Municipality	6	CSD and proof of municipal accounts/affidavit/proof of residence signed by ward Councilor

Province of KwaZulu Natal	4	CSD and proof of municipal accounts/affidavit/proof of residence signed by ward Councilor

ANNEXURE A

PRELIMINARY PROGRAMME

The Tenderer shall detail below or attach a preliminary programme reflecting the proposed order and rate of progress for each portion of the work comprising this Contract. The programme shall be consistent with and in support of his time required for completion and shall be in accordance with the requirements of this tender.

PROGRAMME												
ACTIVITY	**WEEKS / MONTHS**											

SIGNATURE OF TENDERER; ……

SCHEDULE OF PERSONNEL AND EMPLOYEES

The Tenderer shall state below the number of Personnel and Employees to be employed on the Works.

PERSONNEL AND EMPLOYEES	TENDER			TENDER
	FULL TIME	PART TIME	FULL TIME	PART TIME
1. Technical staff				
2. Clerical staff				
3. Artisans				
4. Semi-skilled				
5. Unskilled labour				
Total				

State the name, qualifications and experience of permanent Site agent:

Date: ……

SIGNATURE OF TENDERER: ……..

ANNEXURE B

SITE INSPECTION CERTIFICATE

This is to certify that I,

……

representing and duly authorized by (Tenderer) …….

……..

attended the site inspection on

……

Having prior to this site visit carefully examined the tender document, technical information and drawings supplied, I confirm that I was given unrestricted access to inspect those sections of the Site necessary for the execution of the Works.

I further confirm that I am completely satisfied with the scope of work as explained by the Engineer, and am fully aware of all Site conditions and regulations of whatsoever nature that could influence the preparation of our tender.

I therefore append my signature below in agreement that we will not institute any claim against the Employer after submission of our tender based on lack of knowledge of site conditions or regulations appertaining to the execution of this Contract.

_____ _____

Signature of Tenderer's Representative Date

_____ _____

Signature of Representative of the Municipality Date

ANNEXURE C

FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES

1. FINANCIAL STATEMENTS

I/We agree, if required, to furnish a copy of the latest audited set of financial statement together with my/our Director's and Auditor's report for consideration by the NQUTHULOCAL MUNICIPALITY.

2. DETAILS OF CONTRACTOR'S BANK ACCOUNT

I/We furnish the following information:

a) Account Holder Name:……..

b) Name of Bank:……

c) Branch of Bank: ……

d) Town/city/suburb where bank is situated:……

e) Contact Person at the Bank:……

f) Telephone number of Bank: Code: ……. Number: ……..

g) Account Number:……..

h) Bank rating (include confirmation from bank or financial institution):……

I/We hereby authorise the Employer to approach the above Bank for a reference.

SIGNED ON BEHALF OF THE TENDERER:……

DATE: ……

ANNEXURE D

4. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall apply to this contract and the Employer undertakes that the only variations from the General Conditions of Contract are as follows:

SCC 1 Clause 1(1)(1) **"Employer "** means **NQUTHU LOCAL MUNICIPALITY** Herein represented by their Nominee.

SCC 2 Clause 1(1) m **"Engineer"** means the Employer's representative.

SCC 3 Clause 14 **Survey References**

The following sub-clause is added at the end of Clause 14(3) and is numbered 14(4):
"The Contractor shall take adequate precautions to preserve any permanent beacons such as erf boundary pegs, reference marks and bench marks which may be present on or in the vicinity on the site, irrespective of whether any such beacon may have been placed before or during the construction period. "Should any such beacon be distributed by any act or omission on the part of the Contractor or any officer, servant, agent or invitee of the Contractor then the Contractor shall arrange for the displaced beacon to be replaced by a registered land surveyor within such limits of time as the Engineer may prescribe and all costs, charges and expenses arising from such replacement shall be borne by the Contractor.
"Survey diagrams relating to the replacement of beacons in the circumstances described in the previous paragraph shall be submitted by the land surveyor concerned to the Director for Works of the Mpumalanga Department of Works for approval. IN this regard, attention is drawn to Clause 35(1) of the Survey Act No. 9 of 1927 (as amended)."

SCC 4 Clause (1) **Drawings and Documents**

The following shall be added to this Sub-Clause:
Upon receipt of the final payment in respect of the Contract, the Contractor shall forthwith return to the Employer's name. "None of the documents herein before mentioned shall be used by either of the parties hereto for any purpose other than the performance of their respective obligations under the Contractor. "Drawings supplied to the Contractor by the Employer or Engineer, or supplied by the Contractor and approved of by the Engineer or Employer shall not be departed from without the written instructions of the Engineer or Employer. "All dimensions will be figures on the drawings and are to be considered correct even if not to scale. No dimension shall be obtained by scaling."

SCC 5 Clause 24 **Competent employees**

Add the following:

Approved on-site training of the labour force by the Contractor will be required for all facets of the construction work involved under this contract.

SCC 6 Clause 16(2) **Contractor's copies**

The Contractor will be issued free of charge two sets of paper prints of all drawings, one copy of the tender document and one copy of the signed contract document. Additional copies will be to the Contractor's account.

SCC7 Clause 38(7) **Workmen's compensation**

Amend Clause 38(7) as follows:

The Contractor shall provide proof, that he has paid all contributions required in terms of the provisions of the Workmen's Compensation Act (Act No 30 of 1941, as amended), within 28 days of the Commencement Date.

SCC 8 Clause 45(2) **Extension of Time for Completion**

Where the Engineer grants the Contractor extension of time for the completion of the Works the Contractor shall not be entitled to any additional payment for items included under Quantities in respect of such extension of time. This provision shall, however, not prejudice any claim under Clause 51 of the Conditions of Contract.

SCC 8(b) Shortage of Materials

The Tenderer shall ascertain that materials on which his tender based will be available on a continuous basis for the execution of the contract. No additional remuneration or extension of time will be granted should it become necessary to obtain material from other sources.

SCC 9 Clause 49(2) **Application of Contract Price Adjustment**

These clauses shall be deleted in total. Allowances for escalation must be made in the rates tendered for the items stated in the Schedule of Quantities, ie rates shall remain fixed for the full contract period.

SCC 10 Clause 52(2) **Valuation of Material Brought onto site**

Add the following:

Payment for materials on site will only be made for those materials which are physically on site, for which proof of ownership by the Contractor is given an for which ownership has been ceded to the Employer.

The Contractor shall remain responsible for the materials and shall insure them against all risks until such time as they are used or built into the works and taken over by the Employer.

TABLE OF CONTENTS

C3 PREAMBLE TO SCOPE OF WORK

GENERAL

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

SCOPE

These Project Specifications are set out in two portions:

PORTION A: COVERS A GENERAL DESCRIPTION OF THE PROJECT, THE FACILITIES AVAILABLE AND THE REQUIREMENTS TO BE MET.

PORTION B: COVERS VARIATIONS TO THE STANDARDISED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS WHICH ARE APPLICABLE TO THE CONTRACT.

STATUS

The Project Specifications together with the drawings and Schedule of Quantity indicate the section of Standard Specification applicable to this Contract.

In the event of any discrepancy between parts of the Standard Specification and the Project Specifications, the latter shall take precedence and shall govern.

PORTION A: PROJECT DESCRIPTION AND GENERAL INFORMATION

PS 1 DESCRIPTION OF THE WORKS

PS 1.1 EMPLOYER'S OBJECTIVES

There are eight primary objectives of the Project. The first is the construction of Community hall ,Clear VU fencing, Ablution facility, Guard house, Parkings and Access road .

PS 1.2 OVERVIEW OF THE WORKS

The work to be carried out under this contract includes the supply of equipment, material, and labour for the successful completion of the project within the constraints of time, cost and quality. The project entails construction of a bulk water mains, bulk sewer outfall and sewage transfer pump station with electromechanical installation of Pumps and concrete palisade fence enclosures.

PS 1.3 EXTENT OF THE WORKS

Extent of the works

- Site Clearance: General clearance of the area of the works.
- Bulk earthworks: Cut to fill, Cut of drains, storm water drainage, Topsoil and road works.
- Hall: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing, Rainwater Goods, Painting and Tiling.
- Toilets: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing
- Guard house: Earthworks, Electrical, Concrete, Formwork, Reinforcement, Brickwork, Carpentry & Joinery, Ironmongery, Roof & Coverings, Ceilings, Plastering, Plumbing, Rainwater Goods, Painting and Tiling.
- Parking: Earthworks, G2 Crusher run, prime and paving surfacing.
- Such other works as may be deemed by Engineer for the completion of the project.
- Borehole

PS 1.4 LOCATIONS OF THE WORKS

The works are in Ndatshana location, under Nquthu Local Municipality.

PS 1.5 TEMPORARY WORKS

The Contractor shall, as relevant:

a) provide temporary drainage works, temporary pumps and other equipment as might be necessary for the protection, draining and dewatering of the works; and

b) construct and maintain haulage, temporary access and construction roads, subject to the approval of the Employer, and permit the Employer, other The Contractor s, statutory bodies or any other person who might require legitimate access to or through the site for executing legitimate business, free and unhindered usage of such roads.

c) temporary water connections, The Contractor ’s offices, storage sheds, latrines, barricading of Works shall be in an approved position and subject to the approval of all authorities concerned.

d) Safety and security of the Contractor s' temporary works shall be at the Contractor s' discretion, but always in accordance with stipulated Occupational Health and Safety requirements.

e) The camp shall be adequately guarded during or outside working hours.

f) include the works required to locate, verify and protect existing services within the works area;

g) be such to ensure no or limited interruption to vehicular and pedestrian traffic; and

h) be such that existing storm water flow shall not be impeded during survey and construction activities.

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

PS2 ENGINEERING

PS 2.1 EMPLOYER'S DESIGN

The Contractor undertakes only construction based on designs issued by the Employer. The Contractor is to follow the specification, the design and construction drawings as laid out by the Employer.

PS 2.2 DRAWINGS

PS 2.2.1 LIST OF DRAWINGS

Drawings are included in this Contract Document based on current available information. Such drawing may be updated (based on actual site situation uncovered during execution of the works) and re-issued during the Contract Period as required.

Drawings include:

a) Typical construction details.

b) Construction Drawings

PS 2.2.2 CONSTRUCTION DRAWINGS

a) As above

PS 2.2.3 SHOP DRAWINGS

Where an item to be supplied in conformance with this Contract specification has not been designed by the Employer, The Contractor shall be required to supply the Employer with 3 copies of detailed shop drawings prior to delivery of materials, including an electronic copy in drawing format that is compatible with the software packages (AutoCAD or DXF) used by the Employer.

NOTA BENE: Only on approval of such shop drawings or an amended version thereof, shall The Contractor proceed with the manufacturing, supply and installation of the designed item.

PS3 PROCUREMENT

PS 3.1 PREFERENTIAL PROCUREMENT PROCEDURES

The Employer promotes preferential procurement.

PS 3.2 SUBCONTRACTING

The commitment of the Employer to Government Policy concerning the empowerment of the SMMEs shall be noted and adhered to by The Contractor. It is against this background that the Employer has made provisions under this contract to ensure that The Contractor impart skills to the local sub-The Contractor s within the project area during the project implementation.

It is the intention of the Employer that the minimum targeted participation goal for the local sub-The Contractor s is for but not limited to the full value of subcontracting works identified by the Employer as covered in the Bill of Quantities. The onus is upon the main The Contractor to handle and manage the procurement process of the sub-The Contractor s and once appointed, should be dealt with in accordance with the provisions of Clause 4.4 of the General Conditions of Contract 2010.

The identified scope of work by the Employer includes but not limited to the above.

The minimum requirements for selection of the sub-The Contractor s are as follows:

1. Valid CK registration

2. SA ID copies of owners
3. Active CIDB membership: **minimum grading 1CE**
4. Valid Tax clearance certificate
5. COIDA certificate
6. Company Profile including relevant experience and skilled personnel CVs
7. Health and Safety Plan The Contractor is:

a) to enter contract with any (nominated, selected) Sub - Contractor (s) in accordance with the requirements of Clause 4.4 in the General Conditions of Contract for Civil engineering Works (2010),2nd edition. The number of Sub - Contractor (s) will be determined by the main The Contractor depending on the Subcontracting Scope of Work and the amount of work that is to be carried out under this Contract as outlined above and in the Bill of Quantities.

b) Required to utilise local Sub - Contractor (s) (or regional if he fails to find suitable Sub - Contractor (s) from within the project locality)

c) Responsible for all work executed (including QUALITY, CONTRACTUAL LIABILITIES) on his behalf or under his supervision and/or management by all sub-The Contractor s, including nominated or selected sub-The Contractor s.

Note:

- **Local** Sub - Contractor (s) are Sub - Contractor (s) from within the project suburb or ward.
- **Regional** Sub - Contractor (s) are Sub - Contractor (s) from within the region as per the Dr Pixley ka Isaka Seme Local Municipality demarcation of the regions.

The Contractor shall be expected to enter a contract with the nominated or selected Sub - Contractor (s) in accordance with the requirements of Clause 4.4 the General Conditions of Contract. The Employer must be supplied with a copy of the contract/agreement for records.

***NOTA BENE**: The Employer shall not negotiate directly with sub-contractors and all problems relating to programming, workmanship, etc., as they are matters between the Contractor and his sub-contractor (s).*

In the execution of the Subcontract Work, the Contractor shall ensure that the Sub - Contractor (s) comply with all relevant legislation and regulations including, but not confined to, the Occupational Health and Safety Act. The Contractor hereby indemnifies the Employer against any loss, damage, or claim for Subcontract Works

set out for the Project Scope arising out of the former's failure to comply with instructions issued to him regarding these requirements.

PS 3.2.1 PERFORMANCE AND EXECUTION OF THE SUBCONTRACT WORK

The Contractor must ensure that his Sub - Contractor (s) shall supply sufficient, suitable resources (e.g., equipment, labour, material) to execute all the Subcontract Work including the portion identified by the Employer as outlined in the Scope of Work PS 3.2 and Bill of Quantities.

The Contractor shall also ensure that the Sub - Contractor (s) shall execute the Subcontract Work in accordance with the Scope of Work and Programme to the reasonable satisfaction of the Employer.

PS 3.2.2 QUALITY OF THE SUBCONTRACT WORK

In accordance with the requirements of Clause 4.4 in the General Conditions of Contract for Civil Engineering Works (2015), 3nd edition, it is the responsibility of The Contractor to ensure that the Sub-Contractor shall be capable of executing the Subcontract Work efficiently and in accordance with the Scope of Work.

PS 3.2.3 Laws and Regulations

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

- Income Tax Act, the
- Compensation for Occupational Injuries and Diseases Act,
- Unemployment Insurance Act,
- Basic Conditions of Employment Act,

PS 3.2.4 RESOURCES TO COMPLETE SUBCONTRACT WORK

Although it is preferred_by the Employer that The Contractor ensure that the Sub - Contractor (s) supply all required resources such as labourers, equipment, hand tools, power-driven tools, if need be, which are required by him for the execution of the Subcontract Work, however the onus is upon The Contractor to determine the extent of resources the Sub- Contractor shall supply to ensure that the works are completed in time. The agreement between The Contractor and Sub- Contractor is The Contractor 's

responsibility and Employer is indemnified from any agreements entered between The Contractor and his Sub- Contractor(s) PS 3.2.5 PAYMENT

The Contractor shall ensure that Sub - Contractor (s) are paid within stipulated time as per the Agreement with the Sub- Contractor failure which The Contractor can be reported to the Employer and may prejudice his future employment with Employer.

PS 3.2.6 RETENTION MONIES

The Employer will deduct Retention money for the overall works including the Sub-Contract Work at the percentage stated in the Contract Data.

PS 3.2.7 Resolution of Disputes

Should any dispute between The Contractor and the Sub- Contractor arise out of the provisions of the Subcontract, or the execution of the Subcontract Work, every effort shall be made by

the Parties to resolve the matter themselves without the intervention of the Employer. The agreement signed between The Contractor and Sub- Contractor should state dispute resolution procedure.

PS4 CONSTRUCTION

PS 4.1 GENERAL CONDITIONS AND APPLICABLE STANDARDS

PS 4.1.1 GENERAL CONDITIONS

The “Special Condition of Contract” to be read in conjunction with the “General Conditions for Construction Works (GCC 2015).

PS 4.1.2 APPLICABLE STANDARDIZED SPECIFICATIONS

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

SANS	DESCRIPTION
28	: Metal ties for cavity walls (1986)
227	: Burnt clay masonry units (2007)
282	: Bending dimensions and scheduling of steel reinforcement for concrete (2004)
523	: Limes for use in building (2007)
558	: Cast iron surface boxes and manhole and inspection covers and frames (1973)
674	: 2008

920 : Steel bars for concrete reinforcement (2005)

1024 : Welded steel fabric for reinforcement of concrete (2006)

1083 : Aggregates from natural sources - Aggregates for concrete (2006)

1090 : Aggregates from natural sources - Fine aggregates for plaster and mortar (2002)

1200 A : General (1986)

1200 AB: Employer's office (1986)

1200 C : Site clearance (1980)

1200 D : Earthworks (1988)

1200 DB: Earthworks (Pipe trenches) (1989)

1200 DK: Gabions and Pitching (1996)

1200 G : Concrete (Structural) (1982)

1200 GA: Concrete (Small works) (1982)

1200 GE: Precast Concrete (1984)

1200 L : Medium pressure pipelines (1983)

1200 LB: Bedding (Pipes) (1983)

1200 LC: Cable ducts (1981)

1200 LF: Erf connection (water) (1983)

1200 LG: Pipe jacking (1983)

1200 DM: Earthworks (Roads, Subgrade) (1981)

1200 LD: Sewers (1982)

1491-1 : Portland cement extenders Part 1: Ground granulated blast-furnace slag (2005)

1491-2 : Portland cement extenders Part 2: Fly ash (2005)

1491-3 : Portland cement extenders Part 3: Silica fume (2005)

1882: Polymer concrete surface boxes, manhole and inspection covers, gully gratings and frames (2003)

50197-1: Cement - Part 1: Composition, specifications and conformity criteria for common

EN 197-1 cement

5831 : Presence of chlorides in aggregates

5861-2 : Concrete tests - Sampling of freshly mixed concrete (2006)

5862-1 : Concrete tests - Consistence of freshly mixed concrete - Slump test (2006)

5863 : Concrete tests - Compressive strength of hardened concrete (2006)

5864 : Concrete tests - Compressive strength of hardened concrete (2006)

5865 : Concrete tests - The drilling, preparation, and testing for compressive strength of cores taken from hardened concrete (1994)

0268-1 : Welding of thermoplastics – Welding Processes

1476:2009: Fabricated flanged steel pipework Reference

is made to certain provisions of:

SANS 1921-5 Construction and management requirements for works contracts: Earthworks activities which are to be performed by hand.

SANS 1914-5 Targeted construction procurement: Participation of targeted labour. All the above specifications are not issued with this volume but are available at the Contractor ’s expense from: Standards South Africa,

For "Workmen's Compensation Act" read "Compensation for Occupational Injuries and Diseases Act, 1993 (Act No.130 of 1993)" wherever it appears. For "Machinery and Occupational Safety Act" and "Mines and Works Act" read "Occupational Health and Safety Act, 1993 (Act 85 of 1993)" wherever they appear. For "maintenance period" read "Defects Liability Period in terms of Clause 1.1.1.13 of the General Conditions of Contract, 2010" wherever it appears

PS4.1.3 OTHER STANDARDS

Other Standard Specifications applicable to this Contract shall be:

a) ASTM C.309 Type 1 (Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete) b) WRC MSCC

PS4.2 PARTICULAR GENERIC SPECIFICATIONS

PS4.2.1 MINIMUM HEALTH AND SAFETY REQUIREMENTS

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

PS4.2.1.1 ROAD SAFETY EQUIPMENT

The internal conduit survey unit shall be provided with:

a) an amber-flashing beacon, which shall comply with and be operated in accordance with any governing road vehicle lighting regulations or similar.

b) appropriately sized and quantity of road signs, including delineators and cones which shall be displayed at the works area in accordance with safety regulations or similar.

c) bright coloured overalls, fluorescent over-jackets and belts for each team member for use at all working times during the day or night.

PS4.2.1.2 PERSONAL SAFETY EQUIPMENT

The internal conduit inspection unit shall be provided with:

a) oxygen deficiency and gas detector apparatus, which shall be regularly serviced and operable.

b) fresh air breathing apparatus, face mask and demand value, with a sufficient minimum compressed air supply, determined by the duration of manhole and/or conduit entry.

c) an approved full vertical lift safety harness.

d) personal equipment per member:

i) safety helmet; ii)

safety boots;

iii) sewer wading boots; and iv)

disposable protective gloves.

e) First Aid Kit suitable to cater for the number of team members.

f) facilities for washing, including:

i) soft soap; ii)

disinfectant; and iii)

clean water.

g) radio equipment and cellular phone for onsite and emergency communication. h) fire extinguisher.

PS4.2.2 TRAFFIC CONTROL

a) A traffic control plan shall include detailed diagrams showing the location of all traffic control devices and the length of time for all lane closures, as well as location of any flaggers, as necessary.

b) One lane of traffic in each direction must be maintained at all times.

c) A written method of handling traffic for each different phase of the project shall be submitted and include both vehicular and pedestrian traffic.

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

PS4.2.3 METRIC MEASUREMENT

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

PS4.2.31 CONCRETE, FORMWORK AND REINFORCEMENT

NOTA BENE: All in situ concrete work (mass and reinforced) shall comply with SANS 1200G (”8. Measurement and Payment" is not applicable) supplemented by the clauses in this section. Where:

- SANS 1200G and the clauses in this section are in conflict, the clauses in this section shall take precedence.
- the term "plain concrete" appears in SANS 1200G it shall be read as "mass concrete".

PS4.2.31.1 CEMENT

Cement shall be Portland cement (or similar approved) complying with the requirements of SANS 50197-1/EN 197-1 or SANS 5831.

Samples of cement from anyone, or from every consignment, may be required by the Employer’s authorized representative for test purposes. Cement in any consignment from which a sample may have been taken for testing shall not be used until it has been approved. Allowance shall be made for possible delay in that tests may take 10 days to carry out.

Bags of cement shall be stacked in a waterproof, solidly constructed shed with a central door and a floor rendered damp-proof with a tarpaulin. The bags of cement shall be closely stacked (but not against walls) in order to reduce air circulation in such a manner that the cement is used in the order in which it was received, i.e., first in first out.

PS4.2.31.2 SAND (FINE AGGREGATE)

The fine aggregate shall comply with the requirements of SANS 1083. Other aggregates may be approved if they have a satisfactory history and/or test results.

No aggregate may be used until it has been approved. Samples having a mass of 25kg (16,5l) of the aggregate proposed to be used may be required by the Employer’s authorized representative for test purposes. Samples having a mass of 25kg shall be forwarded every 3 months during concreting work and also if the source of supply is

changed. Allowance must be made for possible delay in that the tests may take 14 days to carry out.

PS4.2.31.4 CONCRETE

Concrete shall be of the classes given in the following table. The proportions of the ingredients and the nominal size of the coarse aggregate for each class shall be as laid down therein:

Class	**Cement**	**Aggregate**			**Strength (MPa)**
	Part	**Fine**	**Coarse**	**Size**	
		Part	**Part**		
A	1	4	8	50	10
B	1	3	6	38	15
C	1	3	6	19	15
D	1	2	4	38	25
E	1	2	4	19	25
F	1	1 1/2	3	19	30
G	1	1	2	19	40

The strength given in the above table shall be the minimum required at 28 days. Unless otherwise specified Class B concrete shall be used for mass concrete and Class E concrete for reinforced concrete.

Maximum concrete slumps acceptable for different types of construction concrete are as follows:

a) Vibrated reinforced concrete = 50mm

b) Un-vibrated reinforced concrete = 75mm

c) Mass concrete = 75mm

When so required by the Employer's authorized representative, and whilst concreting is in progress, the consistency of the mixture shall be ascertained by means of the slump test as later described herein.

PS4.2.31.5 VOLUME BATCHING

The coarse and fine aggregate shall be measured by volume and, unless otherwise directed, cement shall be measured by mass: the volume of a 50-kg bag of cement shall

be taken as 33l. Suitable measuring boxes for the coarse and fine aggregates shall be provided to the approval of the Employer's authorized representative

The proportions given above are approximate only, and should the Employer's authorized representative consider that the voids in the coarse aggregate require more or less matrix than is formed by the proportions specified, he may vary the quantities of coarse and fine aggregates to obtain the required density and workability of the concrete, provided that the proportion of cement to the total volume of the aggregate shall not be less than that specified.

When the sand is not completely dry, allowance must be made for bulking due to the moisture content. The amount of bulking shall be determined by The Contractor in the presence of the Employer's authorized representative

The amount of water shall never exceed 34l to every bag of cement used, including the water contained in the sand.

Effective screens shall be provided to protect the mixing of concrete during windy weather.

PS4.2.31.6 WEIGH BATCHING

The proportioning of the coarse and fine aggregates by mass shall be permitted, providing the method used is approved by the Employer's authorized representative

a) All requests received by the Employer's authorized representative to make use of weigh batching shall be submitted to the Structural Engineer for approval.

b) If the weigh batching process is preferred to volume batching, the proposed mix proportions are to be equivalent to the relevant volumetric mixes as documented previously herein and be based on a minimum cement content.

c) The following procedures must be complied with:

i) The Contractor must timeously obtain written approval for the use of weigh batching and submit all information as set out below, with his application.

ii) The mix transformation from volume to weigh batching shall be carried out at an approved laboratory.

iii) Weigh batching equipment must be calibrated and a certificate of accuracy must be submitted before such equipment may be used. On contracts of long duration and/or requiring large quantities of concrete, new calibration certificates may be required every four months.

iv) The cement to aggregate ratio by volume for the following mixes will apply:

- Class C (15 MPa) - c/a = 1:9
- Class E (25 MPa) - c/a = 1:6
- Class F (30 MPa) - c/a = 1:4.5
- Class G (40 MPa) - c/a = 1:3

v) The following cement/water ratios by mass must also be complied with:

- Class C (15 MPa) - c/w = 1.30 to 1.35
- Class E (25 MPa) - c/w = 1.65 to 1.80
- Class F (30 MPa) - c/w = 1.90 to 2.05
- Class G (40 MPa) - c/w = 2.30 to 2.50

PS4.2.31.7 READY MIXED CONCRETE

Any application to use ready mixed concrete shall be submitted by The Contractor at an early stage for approval by the Structural Engineer. Only suppliers on the Employer's approved list will be considered.

New applications must be submitted to the Employer, well in advance.

PS4.2.31.8 STRENGTH CONCRETE

The Contractor shall be responsible for the design of strength concrete and for the measurement of the constituent materials to produce concrete that complies with the specified requirements.

a) Trial mixes

The Contractor shall ensure that samples of the constituent materials of the concrete, together with evidence that they comply with the provisions, are supplied for approval in good time and provide the Employer’s authorized representative with:

i) a statement from an approved independent laboratory of the results of tests; or ii) an authoritative and acceptable report, or record of the previous use of and experience with, the material concerned.

The cement, types of aggregate and their origins shall not be changed throughout the duration of the Contract without giving prior notification to the Employer who shall verify that the above requirements are complied with and that the important qualities of the concrete shall not be impaired.

b) Consistency

Unless otherwise indicated by the general workability of the concrete, method of transportation, conditions of placement or otherwise specified by the Employer, the suggested slump values, for different mixes of concrete shall be as specified in this document.

c) Workability

Ensure that the concrete is of such workability that it can be readily compacted into the corners of the formwork and around reinforcement without segregation of the materials and without excessive "bleeding" of free water at the surface.

PS4.2.31.9 EXPANSION ALKALI-AGGREGATE REACTION

The use of some local aggregates may lead to an expansive alkali-aggregate reaction if the concrete in the structure will be exposed to continual dampness or will be subject to alternate wetting and drying.

Alkali reactive aggregates, i.e. certain granites, quartzites and Malmesbury hornfels (shale), shall not be used in conjunction with high alkali cement for concrete in any part of the works. Where a high alkali cement shall be one in which the equivalent alkali content exceeds 0,60% by mass of the cement.

If the Contractor chooses to use one of the aggregates stated above in lieu of stone as described in this document, he shall:

a) ensure that no high alkali cement is delivered to the site. Any such high alkali cement shall be rejected and the cost of its removal and replacement with cement having an acceptable alkali content shall be borne by him.

b) provide certificates stating the alkali content of each delivery of cement to the site, based on tests carried out at a laboratory approved by the Employer. The cost of testing, including sampling, transporting of samples and issuing of certificates, shall be borne by him.

c) be entitled to use an approved brand of cement as a means of ensuring that the permissible alkali content is not exceeded. Where he shall make allowance for the higher price of such approved brand, if he chooses to use this method.

PS4.2.31.10 PUMPING OF CONCRETE

The placing of concrete by pumping in any section of the works shall be subject to the written approval of the Employer’s authorized representative The Contractor shall furnish full details regarding the mix proportions of the concrete that he intends to place by pumping.

PS4.2.31.11 ADMIXTURES TO CONCRETE

The use of admixtures in concrete shall only be considered should special circumstances warrant this and only with the prior written approval of the Employer. The Contractor shall provide the following information:

a) the trade name of the mixture, its source and the manufacturer's recommended method of use;

b) typical dosage rates and possible detrimental effects of both under and over dosage;

c)the expected average air content of freshly mixed concrete containing an admixture which causes air to be entrained when used at the manufacturer's recommended rate of dosage.

PS4.2.31.12 SLUMP TEST

The apparatus and the method of determination of the slump of freshly mixed concrete shall comply with SANS 5862-1. a) Apparatus

i) A mould in the form of a frustum of a cone and having the following nominal internal dimensions:

- Bottom diameter : 200mm
- Top diameter : 100mm
- Height : 300mm

The mould shall:

- be of a metal (other than brass or aluminum) of side thickness at least 1.6 mm and shall have a smooth internal surface.
- have suitable base plate and handles to facilitate lifting it from the test specimen in a vertical direction.

ii) The tamping bar shall have a nominal diameter of 16mm, a length of 600mm and with sharp corner rounded off at one end.

d) Procedure:

The test shall be carried out in an area that is free from vibration and shocks. Ensure that the internal surfaces of the mould are free from set concrete and are clean and dry.

Place the mould with the bottom on a smooth, horizontal, rigid, non-absorbent surface and hold the mould firmly in place while it is being filled as follows:

i) in four layers, each thickness approximately one-quarter of the height of the mould. Tamp each layer with 25 strokes uniformly spaced over the cross-section of the mould.

Tamp the bottom layer throughout its depth and ensure that when tamping the second and subsequent layers the strokes penetrate into the underlying layer.

ii)after the top layer has been tamped, strike off the concrete level so that the mould is exactly filled. Clean off any concrete that may have leaked out between the mould and the supporting base-plate surface. Remove the mould from the concrete immediately by slowly and carefully raising it in a vertical direction. This will allow the concrete to subside. Immediately measure the slump, to the nearest 5mm, by determining the difference between the height of the mould and the height of the specimen.

Regard the test as invalid, if a slump specimen collapses or shears off laterally, discard the result and repeat the test.

PS4.2.31.13 CONCRETE CUBES

The apparatus for making and testing of concrete cubes shall comply with SANS 5863.

a) Apparatus

Cubic metal moulds shall:

- be steel;
- be machined and adequately strengthened to resist distortion;
- have an internal distance between faces of 150mm;
- be constructed so as to facilitate the easy removal without damage of the moulded specimen; and
- have a metal base plate which shall be attached to the mould by springs or screws.

When assembling the mould for use, the joints between the sections of the mould, the contact surfaces between the bottom of the mould and the base plate, and the internal faces of the assembled mould shall be thinly coated with a grease or oil that will prevent leakage of water through the joints and adhesion of the concrete to the mould.

The tamper must be a steel bar of length 400mm and mass 1.8kg and having a 25mm square ramming face.

b) Sampling and making cubes

Sampling shall comply with SANS 5861-2.

One set of 3 cubes shall be required for every 40m3, or part thereof, of concrete cast. The sample taken from a batch of concrete and sufficient to make 3cubes shall be placed in a tray or on a platform and mixed thoroughly.

The moulds shall each be filled in 3 layers of approximately 50mm thick concrete. Each layer shall be compacted with the tamping rod, with at least 35 blows to give full compaction of the concrete.

After the top layer has been compacted, strike off the surface of the concrete with a trowel, level with the top of the mould.

Any small hollows shall be filled in with additional concrete. Cement/sand slurry shall not be worked into the surface.

At this stage, the identity of each sample shall be placed on the moulded cube, by means of a label of absorbent material and not by scouring of the surface of the concrete.

c) Curing cubes on site

Cover the test cubes in their moulds with an impervious sheet or wet sacking and store indoors in a place that is free from vibration, excessive draughts, cold and direct sunlight.

After 24 hours, the cubes shall be demoulded, remarked with a waterproof crayon or marker and placed in a curing tank for 7 days before being transported to the laboratory.

The Contractor shall supply the curing tank which shall incorporate a thermostat to control the water temperature at 22 to 25°C and shall be kept within a building.

d) Testing of cubes

The testing of all concrete cubes shall be done in accordance with SANS 5863 by a laboratory approved by the Employer.

A suitable testing machine of sufficient capacity having an accuracy and repeatability that comply with the requirements for Grade A machines of BS 1610 "Method for the load verification of testing machines" shall be used to test the compressive strength of each cube.

The Contractor is responsible for the provision of the cube moulds and for timeous delivery of the cubes to the laboratory.

PS4.2.31.14 CONCRETE QUALITY

Should the Contractor dispute any results obtained from concrete test cubes, the concrete represented by the cubes shall be considered acceptable if The Contractor, at his own cost, proves to the satisfaction of the Employer’s authorized representative that the estimated actual strength of cores taken from the structure (by an approved independent testing laboratory and determined in accordance with SANS 5865 is not less than the specified strength. If the concrete fails to meet the strength criteria stipulated, the Employer’s authorized representative may at his sole discretion and in addition to the options listed in SANS 1200G:

a) accept the concrete subject to approved remedial measures being undertaken by The

Contractor at his own cost; or

b) permit the concrete to remain, subject to reduced payment for lower strength concrete.

PS4.2.31.15 CONCRETING

It is essential that the Contractor ’s representative who has charge of the construction of all concrete work, whether reinforced or not, shall be skilled in this class of work, and shall personally supervise the whole construction, paying special regard to:

a) the quality, testing and mixing of the materials;
b) the laying of the material in place and the thorough compaction of the concrete to ensure solidity and freedom from voids;
c) the construction and removal of formwork; and
d) the sizes and positions of the reinforcement.

Particular care shall be taken to work concrete against formwork and around reinforcement. Internal vibrators may be used with the approval of the Employer’s authorized representative but external vibrators which act only on the formwork WILL NOT be permitted.

Concrete to be reinforced shall be deposited in such quantities as will permit of it being properly compacted around the reinforcement.

The placing of concrete shall be completed within ½ hour after mixing or within ½ hour after agitating and within 2,5 hours after mixing in the case of ready mixed concrete. Under no circumstances shall concrete be incorporated into the work after it has attained its initial set.

Care shall be taken to prevent, as far as possible, the formation of laitance or scum. Laitance is to be understood to mean the scum of strengthless and inert material which forms on the surface of concrete.

Concrete shall not be dropped into position from a height greater than 2.5m unless prior approval is obtained from the Employer’s authorized representative.

If an inclined chute is used for transporting concrete, it shall be of such slope as will ensure a continuous flow of concrete without the use of an excessive quantity of water

and without segregation of the aggregates. The chute must be flushed out and properly cleaned before and after each working period. All waste from flushing shall be discharged outside the formwork.

In beams, each portion of a successive layer shall be placed as soon as the concrete below has been properly worked around reinforcement and against formwork. Concreting shall be carried forward in irregular steps, that is to say, one layer shall not be completed over the whole section before the succeeding layer is commenced. Concreting of slabs and beams shall, as far as possible, be carried forward in one operation. When concreting has to be interrupted the concrete shall be left with a level, rough top surface with ends vertical. The concrete shall not be merely sloped down.

On resuming concreting, the old surface shall be roughened and all laitance thoroughly and carefully removed before any new concrete is deposited. This must be carried out by brushing the surface of the concrete while it is still green. Great care must be taken to avoid any weakness at the junction of old and new concrete and the old surface shall be coated with a thin layer of cement and sand mortar, in the same proportions as that of the adjoining concrete.

While the concrete is setting, it shall not be disturbed or shaken by traffic, either on the concrete itself or upon adjoining formwork.

No holes in concrete elements shall be patched or filled in without inspection, instruction and approval of the Employer's authorized representative

No concreting shall be carried out when the air temperature is below 4°C when it is rising and 8°C when it is falling.

Before concreting is commenced The Contractor shall give the Employer's authorized representative 48 hours' notice of his intention to do so.

Concrete surface beds, excluding heavy industrial floors etc. shall be Class C concrete and shall be laid in suitable size panels not exceeding 20m^2 in area and with the length of any panel not exceeding 4.5m.

Where concrete beams are supported on concrete columns, the columns are to be concreted up to the underside of such concrete beams and then concreted up to the top of the beams, integral with the beams.

NOTA BENE: Any finish applied to the surface of concrete floors, is to be understood as being additional to the thickness of the concrete described or shown on the drawings.

PS4.2.31.16 CURING OF CONCRETE

After the concrete has been placed, all exposed surfaces shall be kept continuously damp for at least 10 days by methods as may be approved by the Employer's authorized representative, such as covering with approved building paper, or by means of wet canvas, wet sacks, wet sand, by continuous hosing or ponding with water.

PS4.2.31.17 CONCRETE LINTELS (CAST IN-SITU)

Concrete lintels cast in-situ shall be of Class E concrete, reinforced with steel reinforcement as well as of depths specified in the table hereunder. Each lintel shall be

the full thickness of walls into which they are cast and 450mm longer than width of openings.

Clear or daylight span	**Depth in brick courses**	**Reinforcement**
< 1m	3	Nil
≥ 1m ≤ 1.5m	3	One 12mm diameter mild steel rod, 40mm up from bottom, for each half brick width of soffit.
> 1.5m ≤ 2m	4	One 16mm diameter mild steel rod, 40mm up from bottom, for each half brick width of soffit.
> 2m	To detail	To detail.

PS4.2.31.18 BUILDING ON CONCRETE FOOTINGS AND BEAMS

No brickwork, stone walling or other structure shall be built on concrete footings until at least 3 days after placement of the concrete in the case of mass concrete footings and after 7 days in the case of reinforced concrete footings or as may otherwise be directed by the Employer's authorized representative

No brickwork, stone walling or other structure shall be built on reinforced concrete beams or similar members until the formwork and all propping or supports have been removed.

PS4.2.31.19 SLIP JOINTS BETWEEN CONCRETE AND BRICKWORK

Slip joints shall be provided between brickwork and concrete slabs and beams by levelling up and troweling smooth the bearing surfaces of brickwork with 3:1 cement mortar and covering the bearings before the concrete is cast, with two layers of one side smooth tempered hardboard, with the smooth sides in contact.

The ends and sides of beams and edges of concrete slabs shall be separated from the brickwork with 13 mm thick bitumen impregnated soft board or expanded polyethylene strips placed vertically against the brickwork before the concrete is cast.

Similar slip joints shall be provided between brickwork and concrete lintels cast in situ, but without soft board or expanded polyethylene strips at ends.

PS4.2.31.20 MOVEMENT JOINTS

All movement joints are to be filled in with approved bitumen impregnated soft board or expanded polyethylene strip unless otherwise specified or detailed on drawings. Form similar movement joints where pathways adjoin structures externally.

PS4.2.31.21 CUTTING, PUNCHING OR HACKING CONCRETE

No reinforced concrete shall be cut or hacked without the approval of the Employer’s authorized representative

PS4.2.31.22 FORMING KEY TO CONCRETE FOR PLASTER AND OTHER FINISHES

Where rough formwork has been used, surfaces of concrete to receive plaster and other finishes, shall, immediately after the formwork has been removed, be well wetted and wire brushed whilst the concrete is still green and then slushed over with 2:1 cement grout to form a key for the finish, all to the approval of the Employer’s authorized representative The slushing is to be allowed to set hard before the finish is applied.

Where smooth formwork is used, surfaces of the concrete to receive plaster and other finishes shall be hacked, on the distinct understanding that hacking of concrete shall be at no extra cost.

Surfaces of concrete receiving plaster or other finishes shall not be plastered or finished until the Employer's authorized representative has signified his opinion that the surfaces are suitable to receive plaster or other finishes.

PS4.2.31.23 SLEEVES PIECES

Where it is necessary to leave plugs or holes in beams, slabs or any other reinforced concrete, all such plugs or holes must be situated in positions approved by the Employer's authorized representative before concreting. Where it is necessary to carry pipes, bolts, wires or any other fittings through reinforced concrete members, approved pipe sleeves must be provided and placed in position before concreting.

All necessary bolts, plugs, brackets, cramps, etc. shall be cast into the concrete as the work proceeds.

PS4.2.31.24 TIES

Where brickwork abuts against concrete, the brickwork is to be tied to the concrete with galvanized hoop-iron ties 1.6mm thick by 3mm wide and approximately 600mm long to every third course of brickwork with one end of each tie cast approximately 150mm deep into the concrete. Where such fixing is impossible, i.e. where steel formwork is used, the ties are to be gun-nailed against concrete with steel nails not less than 38mm long.

PS4.2.31.25 BAGGED FINISH TO CONCRETE

Concrete surfaces to receive bagged finish shall be prepared by removing sharp projections and making good defects with 3:1 cement mortar. Finish by rubbing over the whole area with wet rough sacking and cement grout to obtain an even surface.

PS4.2.31.26 POWER FLOATED FINISH

Power floated finish to floors or slabs means that surfaces shall be floated mechanically to a smooth and even finish before the concrete has set. Small areas inaccessible to the machine are to be floated by hand. Under no circumstances is cement mortar to be added while floating the concrete.

PS4.2.31.27 “NO-FINES” CONCRETE

“No-fines" concrete, for grading flat concrete roofs and the like to falls, shall be in the proportion of

12 parts 19 iron cubical stone to 1-part cement mixed with 20l water per bag of cement and be

laid to falls of not less than 15mm per linear metre for mastic asphalt and not less than 20mm per linear metre for sheet roof covering. For heavy load applications special mix designs may be required.

a) Fillets against upstands

Form triangular fillets, size 75 x 75mm, in corners with walls, kerbs, etc. neatly mitred at angles, stopped where necessary and finished smooth ready to receive waterproofing.

b) To raised floors, bases and other

"No-fines" concrete for raised floors, bases, etc. shall be in the proportions specified. Finish smooth with 3:1 sand/cement screed to receive waterproofing.

PS4.2.31.28 CELLULAR CONCRETE

Cellular concrete, for grading flat concrete roofs and the like to falls, shall be laid in situ in required layers; the bottom layer having a density of 400kg/m3, dressed to falls by varying the thickness, and a 20mm thick top layer having a density of 960kg/m3.

PS4.2.31.29 FORMWORK

Formwork shall include all shuttering, casing and centering of material required for the laying and forming of concrete floors, slabs, beams, lintels, walls, steps, columns, piers, pilasters and any other concrete work requiring moulds or forms and shall embrace all cleats, battens, fillets, wedges, struts, trestles, braces, props, shores and other requirements of material for keeping all in correct position. All materials used for formwork must be suitable and substantial and all joints must be tight enough to prevent leakage of liquid matrix.

All formwork must be designed by The Contractor and if requested to do so, he must submit fully detailed and dimensioned working drawings to the Employer's authorized

representative for checking purposes. Acceptance of the proposals shall not relieve The Contractor of his responsibility for the safety and stability thereof nor for any loss or damage arising out of defective design, materials and/or workmanship.

The formwork must be so constructed that its partial removal can be carried out to the satisfaction of the Employer's authorized representative and in such stages as are required by the working conditions. As far as possible, wedges and clamps must be used in preference to nails. All formwork in its various sections for floors, beams, etc. must be so arranged that the whole may be raised or lowered either independently or together with other sections by means of wedges or other approved methods.

Immediately before concreting is begun, the formwork in contact with the concrete must be thoroughly cleaned, wetted and kept damp whilst the concrete is being placed.

Great care must be taken to keep the formwork wedged up to its correct height and this must be checked by taking levels immediately before concreting is commenced and immediately after it has been completed.

All beams shall have a camber of 6mm to every 3m of length.

The minimum periods that the formwork to the various parts of the structure is to remain in position after concreting shall be as stated in the following table:

Description	**Normal cement**		**Rapid hardening cement**	
	Weather		**Weather**	
	Normal	**Cold**	**Normal**	**Cold**
Beam sides, walls, unloaded columns	2 days	4 days	1 days	2 days
Slabs with props left under	4 days	7 days	2 days	4 days
Beam soffits with props left under including ribbed slabs	7 days	12 days	3 days	5 days
Removal of slab props	10 days	17 days	5 days	9 days
Removal of beam props	14 days	28 days	7 days	12 days

When determining the stripping time for formwork the weather shall be considered to be "normal" when the temperature is above 18°C and "cold" when the temperature is between 5°C and 10 °C, these being the average daily temperatures of the atmosphere adjacent to the concrete. When the average daily temperature lies between the above values for "normal" and "cold" weather the minimum period for stripping of formwork shall be determined by the Employer's authorized representative

Notwithstanding the above minimum periods, formwork may be struck immediately, once the concrete in the various parts of the concrete work has attained the crushing strengths required by the Employer's authorized representative the crushing strengths must be determined by proper tests, which s No formwork of any nature shall be struck, either after the elapse of the minimum periods stated in the above table or on the attainment of the required crushing strengths of the concrete, without the prior consent of the Employer's authorized representative Such consent shall not absolve The Contractor of his responsibility for the safety of the works.

In structures having either in whole or in part, two or more reinforced concrete floors, props shall be provided under the soffits of any beam or slab of any floor which is being used to support the formwork and wet concrete of the floor above, all to the approval of the Employer's authorized representative The props shall not be removed until the formwork supporting the concrete of the floor above has been struck.

Under no circumstances shall steel formwork be oiled where concrete is to receive plaster.

PS4.2.31.30 SMOOTH FORMWORK

Smooth formwork shall be any material approved by the Employer's authorized representative which is to be used to leave concrete surfaces smooth when removed and where no other finish is to be applied.

PS4.2.31.31 REINFORCEMENT RODS

a) Mild steel

Mild steel shall comply with the requirements of SANS 920, Type A or B. hall be carried out by the Contractor.

b) High tensile steel

High tensile steel shall comply with the requirements of SANS 920, Type C or D.

PS4.2.31.32 CONCRETE REINFORCEMENT

a) Rod reinforcement

Bending and hooking of rods shall be done in accordance with SANS 282. Rods shall be bent cold in an effective bending machine, or properly designed rod-bender using a steady pressure and not by hammering.

Diameters, lengths and positions of rods as shown on the drawings must be strictly adhered to. Joints in rods in beams, stairs, etc. will be permitted only were shown on drawings.

Before being placed in position, the rods shall be thoroughly cleaned of all grease, dirt, bituminous material, scale and loose rust.

All distribution rods shall be straight and shall extend at least 150mm into beams or other support. Unless otherwise shown on the drawings, all joints in reinforcing rods shall be lapped 40 times the diameter of the rod. The laps shall be securely tied with 1.25mm diameter annealed mild steel binding wire.

Reinforcement for piles, column footings, columns and walls shall be tied at every intersection, or as directed or shown on drawings, with similar binding wire. Reinforcement in beams shall be tied at alternate intersections in a diamond pattern, unless circumstances demand every intersection.

Great care must be taken to retain the reinforcement in its correct position during the entire period of concreting. Blocks of fine concrete, size approximately 40 x 40mm, or plastic spacers, shall be provided on the formwork to soffits of beams to ensure than the rods are retained in position and that the correct concrete covering to the main reinforcing rods is provided. The blocks shall be of thickness required and shall be placed under the main reinforcing rods at approximately 600mm centres.

Reinforcement in the top of slabs and the like shall be retained in position by means of cradles (stools), formed of steel reinforcing rod as follows:

- R10 for height range 100-300mm and maximum width of 300mm.
- R12 for height range 310-500mm and maximum width of 45 mm.

Recommended spacing of supports for horizontal bars in slabs:

• not further than 600mm apart (cradles ±1000 mm c/c in both directions) for bar diameters up to 12mm.

• not further than 1,000mm apart (cradles ±1 500 mm c/c in both directions) for bar diameters of 16mm and over.

Stools are to be placed on the bottom layer of reinforcement, securely retained in position and with correct concrete cover as specified. Cradles are to be securely wired to the slab

reinforcement with binding wire. Beam rods in different layers shall be separated by means of steel spacer bars of suitable diameters and lengths.

Double mats in concrete walls shall be kept in their respective positions by means of suitable steel clips.

Recommended spacing of supports for vertical bars in walls:

• 1,000mm centres in both directions for bars up to 12mm diameter; and

• 1,500mm centres in both directions for bars of 16mm diameter and over.

Supports can be spaced more closely by the design Engineer, depending upon the circumstances.

All stirrups shall be properly fastened to the rods so as to retain their relative positions during the entire period of concreting.

Welding of main rods will not be permitted unless approval has been given by the

Employer's authorized representative Spot welding in lieu of wiring may be used to secure rods and stirrups in position.

The concrete covering the main reinforcement, unless otherwise specified, shall not be less than that stated in the following table:

In cases not included in the above table the cover shall be not less than 25mm. Depending on the condition of exposure and fire resistance requirements, concrete cover can be varied by the Employer but in no case shall the concrete cover be less than the diameter of the rod to be covered.

The cover shall be measured from the face of the concrete to the outside of main reinforcement nearest the face of the concrete and shall exclude plaster and similar finishing materials.

Three samples of each diameter of reinforcing rods, each approximately 600mm long, must be taken from each consignment of rods of similar diameter, for testing. If any

sample is found unsatisfactory, the whole consignment of rods from which the samples were taken shall be rejected.

Top reinforcement in cantilever slabs to be kept in position with a first row of stools or chairs

300mm from the beam or support, and thereafter at a maximum of 40 bar diameters under each bar.

The cover blocks, spacers, bars and stools or chairs are to be placed and/or wired in position by the steel fixer.

b) Welded steel fabric reinforcement

All welded steel fabric reinforcement shall comply with the requirements of SANS 1024. The preferred dimensions are as follows:

1	**2**	**3**	**4**	**5**	**6**
Fabric Reference number	**Nominal pitch of wires**	**Nominal diameter of wires**		**Nominal mass***	
	Longitudinal (mm)	**Cross (mm)**	**Longitudinal (mm)**	**Cross (mm)**	**kg/m2**
617	200	200	10.0	10.0	6.17
500	200	200	9.0	9.0	5.00
395	200	200	8.0	8.0.	3.95
311	200	200	7.1	7.1	3.11
245	200	200	6.3	6.3	2.45
193	200	200	5.6	5.6	1.93
100	200	200	4.0	4.0	1.00
772	100	200	10.0	7.1	7.72
655	100	200	9.0	7.1	6.55
517	100	200	8.0	6.3	5.17
433	100	200	7.1	6.3	4.33
341	100	200	6.3	5.6	3.41
289	100	200	5.6	5.6	2.89
278	100	300	6.3	4.0	2.78
226	100	300	5.6	4.0	2.26
133	100	300	4.0	4.0	1.33

*These mass values are based on the wires having mass of 0,00785 kg/mm2 per metre of length.

The actual mass of the fabric should not differ from the nominal value by more than 6%.

PS4.2.32 PRECAST CONCRETE

PS4.2.32.1 MATERIALS

Cement, water, aggregates and reinforcement shall be as described under the concrete section.

PS4.2.32.2 CONCRETE, FORMWORK AND REINFORCEMENT

PS4.2.32.3 CONCRETE

Concrete shall be as described under the applicable concrete section(s). Unless otherwise specified a Class E concrete shall be used but with coarse aggregate of an appropriate size.

PS4.2.32.4 MOULD UNITS

The whole of this work is to be carried out by a specialist, who has appropriately skilled workers in this class of work.

All materials and finishes are to be to the approval of the Employer's authorized representative

The moulds are to be properly constructed in the best and most up to date practice, made up in suitable sections with all necessary reinforcement, cramps, bands, bolts, etc. for fastening together and are to be constructed so that castings can be easily removed and the moulds re-used without distorting.

Those sections of the moulds which will produce the finished faces of the units are to be specially prepared, perfectly smooth, except where the finish is of exposed aggregate, true to shape and coated with a suitable solution which will prevent units adhering to the moulds, while not in any way discolouring the finished surfaces.

All cast units are to be properly cured and no units are to be fixed or built in until 28 days after casting.

Units are to be properly protected from the elements while curing and are to be kept wet for at least 10 days after casting by frequent spraying with clean water.

Form all necessary checking's, mortices, lugs, etc. for cramps and dowels when casting.

PS4.2.32.5 TERRAZZO BLOCKS

Precast terrazzo work shall be generally as prescribed for precast concrete above. The coarse aggregate of the mix of which blocks are to be formed shall be of 10mm stone. The finish to exposed faces shall be 10mm thick.

PS4.2.32.6 SMOOTH FINISH

Where described as "finished smooth from the mould" such surfaces shall have a layer composed of 1-part (volume) cement and 4 parts (volume) clean fine sand, packed against the faces of the mould before placing the concrete backing. The concrete backing shall be deposited into the moulds in a wet state (not dry pressed) whilst the facing is still wet.

Projections shall be rubbed off and faces shall be of even colour and free from blemishes, cracks and other imperfections. Salient angles shall be **arris rounded.**

PS4.2.32.7 SIZES

Sizes given are approximate; The Contractor shall be responsible for ascertaining the exact sizes based on actual measurements.

PS4.2.32.8 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by The Contractor at his discretion, but such action shall be highlighted to the Employer.

PS4.2.32.9 BEDDING, JOINT AND POINTING

Blocks shall be bedded and jointed solidly in cement mortar composed of 3 parts (volume) of sand and 1 part (volume) of cement and shall be pointed with slightly keyed joints.

PS4.2.33 MASONRY

(Including brickwork and stone masonry)

NOTA BENE: Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick.

PS4.2.33.1 LIME

Lime shall be hydrated bedding mortar lime in accordance with the requirements of SANS 523.

PS4.2.33.2 CEMENT

Cement shall be as specified in the concrete section.

PS4.2.33.3 SAND

Sand shall comply with the requirements of SANS 1090, unless specialist advice is obtained. A sample of 25kg must be delivered to an approved laboratory for testing purposes.

PS4.2.33.4 BURNT CLAY BRICKS

a) Burnt clay bricks shall comply with the requirements of SANS 227 and shall be equal in all respects to the selected samples.

b) Clay bricks for foundations shall be as described in (a) above, but extra hard burnt.

c) Where bricks with holes are used, the holes in such bricks must only be filled in solid with mortar where specifically specified.

d) All bricks that do not carry the SABS Mark, must be tested by an approved laboratory.

PS4.2.33.5 FIREBRICKS

Firebricks shall be of well burnt refractory fireclay, resistant to spalling and cracking and of same size as ordinary bricks.

PS4.2.33.6 LOCAL STONE

Local stone shall be from an approved quarry, free from defects and to the satisfaction of the Employer or his duly authorized representative.

PS4.2.33.7 FREESTONE

All freestone shall be the best and most durable of its kind, free from vents, loose beds, oxide veins and other imperfections to the satisfaction of the Employer or his duly authorized representative and shall be set on its natural quarry bed.

PS4.2.33.8 MORTAR TESTS

a) Sampling

The frequency of sampling will be decided by the Representative/Agent. Sufficient mortar shall be taken from each of the points of laying to prepare a composite sample to make a set of three mortar cubes. b) Moulding

Cube moulds with a nominal size of 100mm, that comply with SANS 5863 must be used. Fill each mould with mortar in three equal layers and compact each layer by means of a tamper. The tamper must be made of hard wood with a flat tamping surface with nominal dimensions of 50 x 25mm and shaped to provide a round stem of approximately 25mm diameter and long enough to afford sufficient hand grip. Immerse the tamper in water for 15 minutes before use.

Each layer of mortar must be compacted by means of 8 evenly spaced pressing strokes of the tamper. After the final layer has been tamped, the excess mortar must be struck off level with the top edges of the moulds. c) Curing

Cover the test cubes (in their moulds) with an impervious sheet followed by wet matting, sacks or similar material, and store them in a place free from vibration, excessive draughts and direct sunlight.

After 24 hours mark each cube so that it can be identified. After 48 hours the cubes shall be removed from their moulds and placed into water in a curing tank at 22 to 25 °C for a minimum period of 7 days before they are transferred to the approved testing laboratory. Ensure that loss of moisture is prevented during transportation and that they are well protected against damage. d) Testing of cubes

The testing of all mortar cubes will be done by a laboratory approved by the Employer and in accordance with SANS 5863.

PS4.2.33.9 CEMENT MORTAR

Cement mortar shall be composed of 6 parts (by volume) of sand and 1 part (by volume) of cement. The material shall be mixed dry until of uniform colour and then water added, and the mixture turned over until the ingredients are thoroughly incorporated. Cement mortar shall be produced in such quantities as can be used before commencing to set as no cement mortar that has once commenced to set shall be used in any way.

Care shall be taken in mixing cement mortar to remove from the mixing machine or platform any old mortar that has already set as such mortar may not be incorporated into any new batch.

Mortar should achieve the minimum required strength (in MPa) for the classes of mortar as set out in the National Building Regulations.

PS4.2.33.10 COMPO MORTAR

Compo mortar shall be composed of 6 parts (by volume) of sand — depending on the quality of the sand available, 1 part of lime and 1 part of cement (by volume). The lime and sand shall be mixed dry, then mixed wet, before the cement is added, approximately ½ hour before using and the adding of the necessary additional water as required.

Compo mortar shall be produced in such quantities as can be used before commencing to set, as no compo mortar that has once commenced to set shall be used in any way.

Mortar should achieve the minimum required strength (in MPa) for the classes of mortar as set out in the National Building Regulations.

PS4.2.33.11 BRICKWORK

Brickwork shall be:

a) wherever practicable, built in English bond. No false headers shall be used and none but whole bricks employed, except where legitimately required to form bond. b) built level and plumb with mortar as specified.

c)laid on a solid bed of mortar and all joints thoroughly grouted up solid throughout the whole width of each course.

d) carried up in a uniform manner, no one portion being raised more than 1.2m above another at any one time. Clay bricks shall be well saturated with water, in the stack or dump, approximately 2 hours before being used. The tops of walls left unfinished shall be well wetted before work recommences.

NOTA BENE: Cement or concrete bricks shall not be wetted.

All rough and fair cutting, cutting of splays, skewbacks, chamfers, etc. shall be properly performed.

Form or leave all necessary openings for pipes etc. and make good after pipes etc. are fixed in position.

PS4.2.33.12 BRICKWORK IN CEMENT MORTAR

a) All brickwork below damp course level, all isolated piers three bricks wide and under, half brick thick walls and chimney stacks above ceiling level, shall be built in cement mortar as specified.

b) Brick arches and brick lintels shall be built in cement mortar as specified, but in the proportion of 3:1.

NOTA BENE: This clause is essential where compo mortar has been specified.

PS4.2.33.13 MORTAR JOINTS

Mortar joints to brickwork generally shall be 10mm in thickness with level bedding joints.

The joints in brickwork:

a) receiving plaster, tiling or similar finishes shall be raked out whilst the mortar is soft to form key for the plaster or mortar backing. The depth of the raking out shall depend on the condition of the bricks; i.e. the rougher the bricks on face the shallower the raking out and the smoother the bricks the deeper the raking out.

b) shall be flushed off where walls are to be bagged, in readiness for the bagging.

PS4.2.33.14 GROUT IN JOINTS IN BRICK FOUNDATION WALLS

All joints in brick foundation walls shall be grouted in solid with 3:1 liquid cement mortar to obviate any crevices for ant (termite) tracks.

PS4.2.33.15 BRICKWORK THICKNESSES

Walls built in two or three half brick thicknesses shall only be built where bonded brickwork (as specified) proves impractical or where required due to the prescribed bond of faced brickwork, all tied together with metal ties in accordance with SANS 28, of the Butterfly Types only, of sufficient length to allow not less than 75mm of each end to be built into brickwork. Ties shall be evenly spaced at not more than 1m apart to every third course and staggered.

PS4.2.33.16 BRICKWORK IN LININGS

Brick linings to concrete shall be tied thereto with 4mm diameter galvanized crimped wire ties bent at ends and of necessary length to allow 75mm to be cast into concrete and 75mm of the other end to be built into brickwork and evenly spaced at not more than 1m apart to every third course and staggered.

PS4.2.33.17 HALF BRICK THICK WALLS

Half brick thick walls shall be built in cement mortar (as specified) and reinforced with 75mm wide brick reinforcement (as specified), 1 row to every 8 course in height, and

built100mm into main connecting walls. The reinforcement shall be lapped 150mm at end joints, where these are necessary, and 75mm at angles.

Brickwork shall be built level and plumb.

PS4.2.33.18 BEAM FILLING

Beam filling shall be half brick thick, built up in mortar as used in the walls below, cut in between roof timbers and carried hard up to underside of roof covering and flushed up with mortar.

PS4.2.33.19 REINFORCED BRICK LINTELS

Reinforced brick lintels shall be built with sound machine-made bricks in 3:1 cement mortar with all vertical and horizontal joints filled solid with mortar throughout the required number of courses and to a distance of at least 330mm on either side of the clear opening.

The number of courses in lintels over the various size openings shall be as specified in the table hereunder and reinforcing steel wires or rods shall be built into the first horizontal joint over the bottom course to the number specified in the following table:

Brick reinforcement shall be of hard drawn mild steel comprising two 2.8mm diameter main wires spaced 75mm apart and 2.5mm diameter cross wires spaced at not exceeding 300mm apart, welded to main wires.

The reinforcing wires and rods shall be of length at least equal to the width of the clear opening plus 330mm at each end. The reinforcement shall be evenly spaced in the brick joints with the outer wires or rods having at least 20mm cover from face of brickwork.

Brick lintels in 270mm thick cavity walls shall be built with inner face of outer thickness, for a depth of three courses above soffit, covered with sheeting as for damp course, the full length of lintels, and space between the two thicknesses for the depth of the sheeting filled in solid with Class E concrete.

Where cavities continue above lintels, the sheeting shall be taken up and turned on to top of first course of brickwork to inner thickness of wall above the concrete filling in lintels. The sheeting is not required in lintels protected from the weather.

The lintels, except where built over pressed steel door frames and the like, shall be supported on temporary turning pieces of suitable and substantial construction left in position for at least 14 days for long spans (1 to 3m).

PS4.2.33.20 HOLLOW TILE LINTELS

Hollow tile lintels shall be formed with approved 300 x 220 x 110mm burnt clay hollow tiles each having not more than 3 cavities. The tiles shall be set end to end and the cavities filled up solid with Class E concrete.

Lintels shall have bearings of not less than 220mm on walls at ends.

The lintels over the various size openings shall be reinforced as specified in the following table:

Clear or daylight span	**Reinforcement**
≤ 1m	One12mm diameter mild steel rod in upper and lower cavities
> 1m ≥ 1.5m	One16mm diameter mild steel rod in upper and lower cavities

The reinforcing rods shall be placed 12mm from top and bottom edges of concrete filling to upper and lower cavities respectively.

Lintels over openings not exceeding 1m wide in 1 brick thick walls shall be on flat and in all other cases shall be on edge using 2 or more lintels in walls 1 brick thick and over, built side by side, to make up the thickness of walls.

Lintels in 270mm thick cavity walls shall be in two 110mm thicknesses with inner face of outer thickness covered with sheeting as for damp-course, the full length and depth of lintel, and the space between the two thicknesses filled in solid with Class E concrete. Where cavities continue above lintels the sheeting in lintels shall be taken up and turned on to top of first course of brickwork to inner thickness of wall.

Lintels shall be made not less than 21 days before building in and shall be cured for at least 14 days by being kept damp in a shaded position.

The lintels shall be hoisted into position and bedded and grouted in solid in cement mortar.

PS4.2.33.21 PRE-STRESSED LINTELS

Pre-stressed lintels shall be vibrated concrete reinforced with stressed high tensile steel wires, or of burnt clay blocks with similar reinforcing wires embedded in grooves in the blocks in 1:3, cement: sand mortar, or of other approved form of construction.

Concrete in lintels shall attain a crushing strength of at least 34MPa at 28 days for ordinary and at 7 days for rapid hardening cement.

The reinforcing wires shall be of ductile high tensile steel wire not less than 4mm diameter and of tensile strength of at least 1,350MPa and shall be stressed to not less than 850MPa.

The lintels may be in a single width to the thickness of wall or may be in two widths, placed side by side, and shall have a depth of not less than 60mm. Top surface of lintels shall be suitably roughened, indented or shaped to give a good bond between the lintels and the mortar for the first course of brickwork above,

Lintels shall have bearings of not less than 225mm on walls at each end.

The number of reinforcing wires in lintels for the various wall thicknesses and spans shall be not less than specified in the table hereunder, and brick courses over lintels of the number indicated in the table and for the full length of lintels shall be built in 3:1 cement mortar with all joints filled solid with mortar:

Nominal wall thickness (mm)	**Clear or daylight span**	**Number of wires (in total number of lintels used)**	**Number of brick courses over lintel**
90 - 110	≤ 1.8m	2	3
90 - 110	> 1.8m ≤ 3m	3	4
180 - 230	≤ 1.8m	6	4
180 - 230	> 1.8m ≤ 3m	6	5
270	≤ 1.8m	7	4
270	> 1.8m ≤ 3m	7	5
340	As described for 1 of 230mm plus 1 of 110 mm, or 3 of 110 mm		

Lintels in 270mm thick cavity walls shall be in 2 widths with joint between the two arranged directly over the window or frame below, and the brickwork above shall be built in 2 x ½ brick thickness with inner face of the outer thickness covered with sheeting as

for damp-course, the full length and depth of lintels, and taken down between the 2 widths of pre-stressed lintels. The cavity to height of lintel courses shall be filled with Class E concrete, and where cavities continue above the lintel courses the sheeting shall be taken up and turned on to top of first course of brickwork to inner thickness of wall above the lintel course. The sheeting is not required in lintels protected from the weather.

PS4.2.33.22 BAGGED FINISH TO BRICKWORK

Bagging to walls is to be carried out after the mortar in joints has set. The wall surfaces shall be rubbed over with wet rough sacking until all joints and crevices are filled up and an even surface is obtained. Cement grout shall be added if necessary to fill up the joints and crevices.

PS4.2.33.23 RAKING OUT FOR AND POINTING FLASHINGS

Brick joints shall be raked out where required for fixing cover flashings and flashings, which shall be pointed in 3:1 cement mortar.

PS4.2.33.24 MASTIC POINTING

Where steel door and window frames are specified to be pointed with mastic compound, they shall be pointed all round externally with an approved waterproofing compound of such composition that it will not stain surrounding surfaces and that it will adhere steadfastly, remain plastic without sagging or running, be capable of accommodating any normal movement of the joint sealed, and will receive paint without "bleeding". The pointing material shall be forced into the joints, which shall have been previously prepared to receive same, by means of a pressure gun or by other suitable method, all in accordance with the manufacturer's instructions.

PS4.2.33.25 BUILDING IN

Ends of timbers, holdfasts, cramps, gratings, air bricks, dowels, etc. shall be built-in in cement mortar.

Door and window frames lift door frames and the like shall be set up in position for building in and securely strutted to prevent distortion whilst the brickwork, lintels, etc. are being built.

Pressed steel door frames and lift door frames shall be grouted in solid at back with cement mortar as the work proceeds. Wood slips, fixing bricks, hoop iron roof ties, etc. shall be built in as the work proceeds.

PS4.2.33.26 SECURING OF ROOFS

Roof trusses shall be fixed at each support to walls with ties of 1.6mm thick galvanized hoop iron, 32mm wide, built 750mm deep into brickwork or embedded 300mm deep into concrete or wrapped around bottom layer of reinforcing in a reinforced concrete beam and wrapped over truss and fixed with four galvanised nails, 40mm long

PS4.2.33.27 BEDDING

All door, window and similar frames shall be bedded and pointed in 1:3 (cement: sand) cement mortar. All wall and floor plates shall be set true and level and bedded in 1:6 (cement: sand) cement mortar.

PS4.2.33.28 POINTING OF BRICKWORK

Clean and point at the end of each working day all exposed masonry work including nail holes, existing brickwork shall be pointed, thus Pointing, repairing eroded and cracked mortar joints, shall be executed on existing and new brick where and when shown by the Employer's authorized representative All disintegrated joints (erosions and/or cracks) shall be cleaned of all existing mortar for the full depth of the deterioration but not less than to a depth of 25mm. All joints shall be:

a) brushed and washed (under pressure) clean prior pointing;

b) kept wet during pointing; and

c) pointed to the full depth of the cut, tooled to match existing.

Steel door and window frames shall be carefully pointed all round and made perfectly watertight.

Joints greater than 25mm shall be stage-pointed.

PS4.2.33.29 FACED BRICKWORK

Faced brickwork shall be built fair and pointed with a keyed or recessed joint as specified. Keyed joint shall mean that the joints are to be pointed with a round jointing tool, well pressed into the joints as the work proceeds.

"Recessed joint" shall mean that the joints are to be square recessed to a depth of approximately 6mm formed with a rectangular jointing tool well pressed into the joints as the work proceeds.

Facing bricks shall be sorted by the brick manufacturer at his yard or by The Contractor on the site to ensure that proper mixing of the bricks within the colour range of each type of facing brick being used is obtained. Sudden changes in the general colour of face work in any 1 type of facing brick shall not be acceptable.

PS4.2.33.30 FIBRE CEMENT SILLS

Sills shall where in any way possible be in single lengths, cut between reveals, fitted with fixing lugs and solidly bedded in 1:3 (cement: sand) cement mortar with a slight projection beyond the finished wall face below.

Internal sills shall be level. External sills shall be set sloping on cut brickwork.

PS4.2.33.31 INSTALLATION OF ELECTRICAL SERVICE

The installation of electrical services, where such service is being provided, The Contractor shall embed in the concrete, as the work proceeds, all conduits, boxes, etc., which will be fixed in position by the electricians, and must reduce all required chases and holes in walls for conduits and form recesses in walls for distribution boards, all in the positions directed. Alternatively, distribution boards may be built into walls as the work proceeds, providing prior approval are obtained from the Employer.

The Contractor shall afford every facility and shall render reasonable assistance to the electricians in carrying out their work and shall make good where necessary, in all trades, after installation has been completed.

Chases, holes and recesses required in walls shall be cut and formed as follows:

- vertical chase for single conduit.
- vertical chase for two conduits.
- vertical chase 150mm wide and 110mm deep for conduits.
- vertical chase 250mm wide and 110mm deep for conduits.
- vertical chase 380mm wide and 110mm deep for conduits.
- vertical chase 560mm wide and 110mm deep for conduits.
- horizontal chase for single conduit.

• Holes 25mm diameter or knocking out bricks and filling space and making good after a pipe has been fixed through a wall.

Recesses for distribution boards shall be:

Width (mm)	Height (mm)	Depth (mm)
330	330	110
455	330	110
635	330	110
610	660	110
610	910	110

PS4.2.33.32 CABLE SLEEVES

Provide under buildings where required 100mm diameter vitrified clay, pitch fibre or plastic pipes as sleeves for electric cable taken up to floor level in cable duct or switch cupboard with easy bends. The pipes shall be as specified for drainage including laying and jointing.

PS4.2.33.33 PATCHING BRICKWORK

Patching of existing walls and closing of openings shall be as shown. All brick shall be keyed to the existing or stepped every course with all surfaces flush with the existing surface and all joints kept online.

PS4.2.33.34 PROTECT FACE BRICKWORK

All face brickwork, stonework, tiling, etc. liable to damage shall be covered up and protected during the progress of the remaining work and any damage done shall be made good to the satisfaction of the Employer’s authorized representative

All face brickwork, stonework, tiling, etc. shall be cleaned down as the work proceeds and shall be covered up with paper, pasted on, or by other approved means where necessary to prevent soiling of the surfaces during the progress of the remaining work. At completion of the works the coverings shall be removed and the surfaces again cleaned down to the satisfaction of the Employer’s authorized representative

PS4.2.33.35 CLEANING

On completion of the work all masonry must be carefully cleaned down, removing all large particles of mortar with a putty knife or chisel. If acid is required for the removal of mortar stains (see note below), it shall be hydrochloric (muriatic) and not stronger than one volume of the commercial acid to nine volumes of water. Before the acid solution is applied, the surface should be thoroughly soaked with clear water; otherwise, the mortar stain may be drawn into the pores causing a permanent dulling of the rich natural masonry colors. The acid solution should be applied with a long-handled stiff fiber brush, with proper precautions as to covering of clothing, hands and arms to prevent burns. It should not be placed over an area greater than 1.5 to 2.0m2 before the wall is again thoroughly washed down, or preferably hosed, with clear water immediately after cleaning. It is important to remove all trace of the acid before it attacks the mortar joint. All frames, trim, sills, or other installations adjacent to the masonry must be carefully protected against contact with the acid solution.

All paving shall be thoroughly cleaned off after laying to remove all traces of mortar and other substances, covered up and protected from damage during the progress of the works and again

cleaned off at completion.

Any detergent or other materials used in the cleaning down of face brickwork etc. shall be of such nature that it will not harm adjoining paint and other finishings in any way.

NOTA BENE: Whenever possible, smooth, light-colored units should be scrubbed with warm water and soap powder in lieu of acid cleaning.

PS4.2.34 PLASTERING

PS4.2.34.1 LIME

Lime shall be hydrated plaster lime complying with the requirements of SANS 523.

PS4.2.34.2 CEMENT

Cement shall be as specified. The gypsum plaster shall not be added to the mixture until the setting coat is to be applied and shall then be thoroughly incorporated into the mixture and used immediately.

a) Two coat work on metal lathing

The rendering coat shall be of compo plaster to which sisal shall be added in the proportion of 4kg of sisal to 1m3 of plaster. The rendering coat shall be well scratched over to form a key for the setting coat.

PS4.2.34.6 COMPO PLASTER

Compo plaster shall be composed of 10 parts (volume) of sand, depending on the quality of the sand available, 1-part (volume) lime and 1-part (volume) cement.

The lime and sand shall be mixed dry until of uniform colour and then mixed wet. Approximately ½ hour before use, add the cement and any additional water as may be required and remix until thoroughly mixed.

Compo plaster shall be produced in such quantities as can be used whilst remaining workable as no compo plaster that has become unworkable shall be used in any way.

PS4.2.34.7 CEMENT PLASTER, ONE COAT WORK ON BRICKWORK:

Cement plaster for 1 coat work on brickwork shall be composed of 4 parts of sand to 1 part of cement for internal work and 5 parts of sand to 1 part of cement for external work, all measured by volume, and mixed as described for cement mortar in sub-clause 4.2.19.9 (Cement mortar).

PS4.2.34.8 THICKNESS OF PLASTER

The gypsum plaster shall not be added to the mixture until the setting coat is to be applied and shall then be thoroughly incorporated into the mixture and used immediately.

b) Two coat work on metal lathing

The rendering coat shall be of compo plaster to which sisal shall be added in the proportion of 4kg of sisal to 1m3 of plaster. The rendering coat shall be well scratched over to form a key for the setting coat.

PS4.2.34.6 COMPO PLASTER

Compo plaster shall be composed of 10 parts (volume) of sand, depending on the quality of the sand available, 1-part (volume) lime and 1-part (volume) cement.

The lime and sand shall be mixed dry until of uniform colour and then mixed wet. Approximately ½ hour before use, add the cement and any additional water as may be required and remix until thoroughly mixed.

Compo plaster shall be produced in such quantities as can be used whilst remaining workable as no compo plaster that has become unworkable shall be used in any way.

PS4.2.34.7 CEMENT PLASTER, ONE COAT WORK ON BRICKWORK:

Cement plaster for 1 coat work on brickwork shall be composed of 4 parts of sand to 1 part of cement for internal work and 5 parts of sand to 1 part of cement for external work, all measured by volume, and mixed as described for cement mortar in sub-clause 4.2.19.9 (Cement mortar).

PS4.2.34.8 THICKNESS OF PLASTER

Plaster on walls shall be not less than 12mm or more than 20mm in thickness and plaster on concrete ceilings and beams shall not be less than 9mm or more than 16mm in thickness. The material must test between 30 and 35MPa. No dry cement powder or grout shall be applied to the surface.

The granolithic shall be laid before the concrete subfloor has matured otherwise the exposed surface of the concrete shall be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the granolithic is laid.

The granolithic shall be laid in panels not exceeding 20m^2 in area and joined to lines of panels with

V-joints as directed. The length of any panel shall not exceed 4.5m and wherever possible the joints between the panels shall coincide with any joints in the concrete subfloor.

Where granolithic is to be tinted, it shall be laid in two thicknesses in one operation, the lower thickness being brought up to within 6mm of the finished level and the upper thickness, into which the requisite quantity of approved colouring material has been mixed, shall be laid. NO DUSTING OF COLOURING MATERIAL SHALL BE ALLOWED.

Granolithic finish to stair risers, sides of kerbs and other vertical surfaces shall be not less than 12mm thick.

Exposed salient angles of granolithic shall be neatly rounded to approximately 20mm radius.

All granolithic work shall be carried out by experienced workmen and shall be protected from injury caused by rain or other extremes of weather for 12 hours after being laid, and against drying out too rapidly whilst hardening by covering with wet sacks or other suitable material and shall be protected from other injury and discoloration during the progress of the remaining work.

Edges of granolithic floors adjoining other floor finishes, edges of margins, etc. shall be true and sharp, all protected by fixing temporary wood strips which shall remain in position until laying of the adjoining flooring material is commenced.

PS4.2.34.11 REEDINGS TO STEPS AND UPPER SURFACES

The treads of steps and upper surfaces of external thresholds finished with granolithic or sand-cement finish shall be rendered non-slip by reeding same near front edge for a width of 100mm and stopped 100mm from ends.

PS4.2.34.12 POLISHING OF GRANOLITHIC

All tinted granolithic finishes to floors, steps, thresholds, skirting, etc. shall at completion of all other work be twice polished with wax floor polish of an approved type.

PS4.2.34.13 SCREEDING TO FLOORS

Concrete sub-floors finished with wood mosaic, semi-flexible tiles and fully flexible vinyl sheeting and tiles and similar finishes shall be screeded with 1:3 (cement:sand) cement plaster of thickness required, but in no case less than 12mm, all steel trowelled to true

and smooth surfaces. The sand used in the plaster shall be of such fineness as will allow for the screed being trowelled to a surface suitable to receive the finishes. The Screeding shall be laid before the concrete sub-floors have matured, otherwise the exposed surfaces of the concrete shall be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the Screeding is laid.

The screeding shall be laid in good time, but no finishes are to be laid if the screed exceeds 70% moisture content when measured with a hygrometer.

No traffic shall pass over nor shall any building operations take place on the screeding unless a proper protective covering is first provided.

NOTA BENE: A similar process shall be applicable where manholes or chambers are screeded.

PS4.2.34.14 SAND-CEMENT FINISH

Sand-cement finish to treads of steps, thresholds, etc. shall be of 1:2 (cement:sand) cement plaster not less than 20mm thick and steel trowelled to true and smooth surfaces. Finishes to risers of steps, sides of kerbs and other vertical surfaces shall be not less than 12mm thick. Exposed salient angles shall be neatly rounded to approximately 20mm radius.

PS4.2.34.15 NATURAL AGGREGATE CONCRETE FLOOR HARDENER

a) Definition

All-natural aggregate hardeners for concrete floors shall consist of a factory prepared blend of clean, properly graded and oven dried natural aggregate, Portland cement and chemical aids, all suitable for monolithic application to the surface of newly placed

As an integral part of this hardener, a membrane curing compound, which must be both compatible with the floor hardener offered and comply with the ASTM C.309 Type 1 specification for moisture retention, shall be used.

PS4.2.34.16 FERROUS AGGREGATE CONCRETE FLOOR HARDENER

The ferrous aggregate hardener for concrete floors shall be a factory prepared blend of clean, properly graded ferrous metal aggregate, Portland cement and chemical aids for application and hardening, ready to apply as a dry shake to the surface of newly placed concrete before finishing.

The ferrous aggregate shall be guaranteed to be free of matter deleterious to concrete, such as oil and non-ferrous particles and shall be treated for rust inhibition. Where required it may contain compatible pigments for tinted floors.

PS4.2.35 GENERAL PRODUCT REQUIREMENTS

PS4.2.35.1 LOCAL CONTENT

Preference shall be given to materials fully manufactured in South Africa with South African raw materials.

PS4.2.35.2 SITE SERVICE

The manufacturer shall be expected to supply samples free of any other additional charge, and the services of a qualified technical representative on all of the building sites pertaining to the particular contract in order to train the placing team in the correct application methods of the product during initial placing upon 1 weeks' notice. Circumstances may necessitate follow-up inspections.

PS4.2.35.3 SHELF LIFE

The shelf life of the offered product shall be stated, and the expiry date displayed on each bag. The Contractor shall ensure that the product supplied will survive the Contract Period or replace the product at his cost.

PS4.2.35.4 REFERENCES

The Contractor shall submit names and locations of projects in South Africa where the offered product has been in successful use for a period of at least 5 years under similar conditions and at similar rates. The Contractor shall:
i) make arrangements with the project owners for access for such visits, if the Employer's authorized representative wish to inspect such reference project sites. ii) provide an acceptable alternative at the same accepted financial rate of the original proposed product, should the Employer's authorized representative find the product unacceptable.

PS4.2.35.5 APPROVED PRODUCTS

Only products that have been tested and which have been approved by the SABS shall qualify.

PS4.2.35.6 APPLICATION RATES

As specified by the manufacturer. Circumstances may necessitate follow-up inspections.

PS4.2.35.3 SHELF LIFE

The shelf life of the offered product shall be stated, and the expiry date displayed on each bag. The Contractor shall ensure that the product supplied will survive the Contract Period or replace the product at his cost.

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PS4.2.35.5 APPROVED PRODUCTS

Only products that have been tested and which have been approved by the SABS shall qualify.

PS4.2.35.6 APPLICATION RATES

As specified by the manufacturer.

PS4.2.35.7 CONTROL TESTING

The Contractor shall be required to conduct control testing as and when requested by the Employer's authorized representative, proving the quality of the product used.

PS4.2.36 SPECIFIC WORK-RELATED INSTRUCTIONS

PS4.2.36.1 THE CONTRACTOR 'S RESPONSIBILITY

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

PS4.2.36.2 NO DISTURBANCE

The Contractor shall be required to perform Works at all conduits with limited and approved disturbance to the existing service provision. Should the Contractor decide to use a stringing method to survey the conduit, the stringing lines shall not be left in the conduit for more than 5 days or without consent of the Employer's authorized representative

PS4.2.36.3 IMMEDIATE DANGER

All obstructions, cracks, irregularities must be fully surveyed and documented. The Contractor must inform the Employer immediately of any obstruction encountered, locations of hazardous atmosphere, or conduits that are in immediate danger of structural failure. Where possible:

a) the survey shall be done from the opposite side, whilst appropriate health and safety

measures are adhered to, so that the extent of the danger can be assessed.

b) the position shall be clearly and accurately marked, to allow operations and maintenance to easily locate the position.

PS 4.3

PLANT AND MATERIALS

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

PS 4.4 ENGAGEMENT OF LABOUR

PS 4.4.1 PROVISION OF A TEMPORARY WORKFORCE FOR THE CONTRACT

The Contractor shall have regard for the stipulation laid down for all Labour-Intensive projects that he employs labour from the local community through the Labour Desk that has been established for this purpose.

The Labour Desk shall assist in identifying available local labour and, where available, semi-skilled labour as well as local sub-The Contractor s. The Labour Desk shall also assist and advise regarding conditions of employment, minimum wages, disputes and disciplinary procedures.

The workforce that is employed on Site shall consist of local labour where applicable, except for approved key staff, to the extent that is compatible with the requirements of Clause 4.11 of the General Conditions of Contract 2010.

The Occupational Health and Safety Act must be adhered to with reference to the safety of any employee irrespective of whether such employee is employed by The Contractor or by a local sub- contractor and Contractor. Furthermore, a contract of employment must

be signed between The Contractor and each of his employees and sub-The Contractor s and between such sub-The Contractor s, and each of the sub-The Contractor 's employees with clear reference to the following conditions:

- The minimum agreed wage rate per hour in respect of labourers;
- The agreed pay rate per unit of production where applicable;
- UIF and WCA payments;
- Minimum working hours per day;
- Start and end times of a daily shift;
- Lunch break times;

Company Policy regarding the following:

- Rain time
- No work no pay - sick, absent
- Disciplinary policy
- Grievance policy
- Method of payment
- Workers' clothing and safety equipment to be issued.
- The Contractor is required to show these items to the Employer for approval before construction commences.

PS 4.4.2 TRANSPORTATION OF LABOURERS

The labour employed on this contract shall be local labour from the nearest local community. Transportation should be arranged for the labourers from Site Offices to the site.

PS 4.4.3 MINIMUM WAGE FOR LOCAL LABOUR

Please take note that the minimum labour rate will be according to the latest Government Gazette: Basic Conditions of Employment Act 75 of 1997.

PS 4.4.4 TRAINING

The Contractor will be expected to provide formal training for the labourers. In this regard the labourers will be attending training for five days and the labourers should receive their full salary while on training. The Contractor is expected to have allowed for this in his rates.

PS 4.5 EXISTING SERVICES

PS 4.5.1 KNOWN SERVICES

Existing known services, both underground and overhead, are indicated on the drawings, but the positions of existing services on the drawings are not guaranteed nor does the Employer accept any liability in this regard.

PS 4.5.2

TREATMENT OF EXISTING SERVICES

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

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

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

PS 4.5.3 USE OF DETECTION EQUIPMENT FOR THE LOCATION OF UNDERGROUND SERVICES

The Contractor is responsible to provide his own equipment to determine the location of existing services and shall locate and expose existing services by hand.

PS 4.6 SITE ESTABLISHMENT, FACILITIES AVAILABLE AND REQUIRED

PS4.6.1 GENERAL

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

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

a) The Contractor shall make arrangements with the relevant authority for a suitable site to establish a construction camp, storage, works offices, workshop/s, kitchen, and shelters for security personnel.

b) The Contractor shall note that only security personnel shall be permitted to remain in
the campsite overnight.

c)Ablution facilities shall be provided for men and women separately. One toilet per twenty workers shall be provided. Such facilities shall at all times be maintained in a clean and hygienic condition. Toilets shall be screened from public view and their use shall be enforced.

d) Covered accommodation shall be provided for perishable or corrodible materials,
fittings and the like and shall be adequate and suitable for their purpose. In the case of cement stores, they shall be well ventilated, weatherproof and waterproof with appropriate floors to keep the materials dry and freely aerated.

e) All such accommodation shall be subject to the approval of the Employer who shall
have free access thereto at all times.

f) Temporary buildings and fencing are to be safe, neat and presentable and the surrounding areas must at all times be kept in a neat, clean and orderly condition for the duration of the Works.

g) It shall be the Contractor ’s responsibility to ensure that they are in compliance with all relevant laws and regulations as well as tribal requirements.

PS4.6.2 SITE FACILITIES REQUIRED FOR EMPLOYER

a) Source of water supply: It will be the responsibility of the Contractor to make his own arrangements for the supply of water. Potable water is available in the area and The Contractor is to make the necessary arrangements for the provision of a metered point of supply with the Municipality. The Employer does not guarantee the availability, sufficiency or continuity of any supply and no claims in this regard will be considered.

The Contractor is to be aware of the fact that this Contract is to be carried close to a builtup environment and that, as such, excessive dust creation will be considered unacceptable by the local residents. The Contractor is to make provision for regular watering of the works in order to alleviate dust creation. During dry weather, or during periods when dust is created by the construction process, The Contractor will be required to water the works a minimum of twice a day, or as specified by the Employer. This is a requirement over and above the normal requirement for watering of the works.

b) Source of power supply: It will be the responsibility of The Contractor to make his own arrangements for the supply of electricity. The sum entered by The Contractor in the Bill of Quantities for the provision of P&Gs shall be deemed to include full compensation for the procurement and supply of powers to the works. The Employer does not guarantee the availability, sufficiency or continuity of any supply and no claims in this regard will be considered.

c) The Contractor ’s camp: The Contractor is to make the necessary arrangements for the payment of services to the Municipality where applicable. The camp site shall be kept clean and tidy, and at the completion of the contract shall be restored to its original condition at the Contractor ‘s own cost, and to the satisfaction of the Employer. In order to facilitate compliance with the Conditions of Contract and the Specification, The Contractor may establish storage accommodation, works offices, workshops, mess-rooms, kitchens, shelters for watchmen, latrines, ablutions and the like in such positions and under such conditions as may be agreed by the Employer.

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

The Contractor shall not make any excavation without written permission of the Employer. Covered accommodation for perishable or corrodible materials, fittings and the like shall be adequate and suitable for their purpose, and, particularly in the case of cement stores, shall be well ventilated, weatherproof and waterproof with floors raised off the ground, so

as to keep the materials perfectly dry and freely aerated. All such accommodation shall be subject to the approval of the Employer who shall have free access there at all times.

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

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

d) Site facilities required for Employer's representative and others:

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

- One office for the Employer's Representative.
- Temporary office accommodation to suit his own requirements.
- Covered parking facilities for two (2) cars for the Employer's Representative.

A cell phone will be required for the sole use of the Employer's Representative. The Contractor shall be responsible for the payment of calls related to the Contract made by the Employer's Representative, on this mobile phone, during the course of the Contract. A Telkom ADSL line with modem facilities shall be provided on site and be available for the sole use of the Employer's Representative at all times.

PS 4.7 SITE USAGE

PS4.7.1 WORK ON PRIVATE OR STATE PROPERTY

The Contractor is to confine his activities strictly to the working area defined as being within 10m on either side of the pipelines, spoil sites and the direct access roads to these. He shall not encroach upon any roadway except with the prior approval of the Employer, in writing. The Contractor shall, throughout the Contract, take adequate precautions to

protect all existing services from damage whether or not they have been pointed out to him.

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

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

Should the Contractor consider that damage to buildings and structures is unavoidable in the execution of any portion of the Works, he shall obtain the approval of the Employer

before proceeding with the work. Where damage is noticed before commencement of work on that erf, this should be reported to the Employer in order to prevent a possible liability claim from the owner.

PS4.7.2 SITE SAFETY AND PRECAUTIONS AGAINST NUISANCE

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

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

Plant used on the Works shall be as efficiently silenced as possible and noisy operations will be permitted only between the hours of 07:00 and 17:00. Any work outside normal

hours will be permitted only on the written authority of the Employer. Wherever excavations or loading of material is liable to form dust, an effective method of spraying water over the excavated area and loaded material shall be instilled. Any rock or debris falling from trucks on the roads shall be removed immediately. Precautions shall be taken to prevent fouling of public roads or private surfaces. The Employer may order the Contractor to broom off and clean roads or surfaces where debris may constitute a danger to the public or a nuisance to the owners.

PS4.7.3 WORK ON LIVE WATER MAINS

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

PS4.7.4

FLUSHING AND CLEANING OF WATER MAINS

On satisfactory completion of work, the mains shall be flushed with potable water supplied by the Employer. The Contractor shall ensure that the water used for flushing is disposed of in an approved manner without damage, nuisance or injury to person or property. The Contractor shall allow in his rates for all costs associated with the flushing of water mains and communications pipes, save the cost of the water used. All water required for the flushing of water mains shall be supplied free of charge by the Council. If, in the opinion of the Engineer, foreign material has entered or remained in pipelines, The Contractor shall arrange for the water mains to be cleaned. The cost of cleaning including the cost of water used, shall be for the Contractor ‘s account.

PS4.7.5 WORK OUTSIDE NORMAL WORKING HOURS

In accordance with General Conditions of Contract Clause 5.8.1, certain work may only be done outside normal working hours. Such work shall be undertaken solely at the discretion of the Employer who shall, from time to time, issue advance orders in writing to The Contractor detailing the work to be undertaken. Work undertaken, as ordered, outside normal working hours shall be measured and paid for at the rates applicable to each and every item carried out as scheduled.

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

Where the Works are conducted within the road reserve of major arterial roads, the

Contractor ‘s operations will be restricted to out-of-peak traffic periods (typically 09:00 to 15:30) or as determined by the Traffic Department. The Contractor shall co-ordinate his activities in such a manner that only minor operations that are non-disruptive to traffic are

carried out during peak traffic periods. Should the Contractor choose to work outside normal working hours without having been ordered to do so by the Employer, permission will not be unreasonably withheld but all additional costs arising out of such work shall be entirely to the Contractor ‘s account.

PS 4.8 PERMITS AND WAYLEAVES

The Contractor will be required to obtain permits and wayleaves from all the applicable service providers.

The Employer will assist The Contractor to obtain clearance from the various departments with services that are likely to be affected by the Contract. It is, however, the Contractor ’s responsibility to obtain final permit and wayleave approval according to applicable procedures and specifications. All associated costs to obtain permits and wayleaves as required for the execution of the works, where such affect other services, shall be deemed to have been included in the scheduled rates for SANS 1200A or SANS 1200AA or SANS

1200AB where pricing provision for such items have been allowed for in the pricing schedules, alternatively it shall be deemed to be included in the various scheduled activity rates or prices provided by the Contractor.

PS 4.9 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS

The Contractor shall, within 20 working days or 10 % of the construction period after taking possession of the site (whichever is the lesser), satisfy himself that the dimensional accuracy, alignment, levels and setting out of existing structures or components thereof are compatible with the proposed works, and notify the Employer of any areas of dissatisfaction.

The Contractor shall, on becoming aware of a defect in existing works which will have an impact on the current works, notify the Employer of such a defect without delay.

The water mains of the existing network would have to be modified slightly to facilitate the connection of the new water main installation.

PS 4.10 INSPECTION OF ADJOINING STRUCTURES, SERVICES & ROPERTIES

The Contractor shall, before commencing with works which have the potential to damage surrounding structures, services, buildings or property, arrange an inspection with the owners of such structures, services, buildings and property and representatives of local or controlling authorities, as appropriate, to determine the condition of buildings, structures, services, paved surfaces, roads, kerbs, channels and the like, that the works could affect, and document their current condition in sufficient detail to enable disturbances or damage which might be caused by the works to be evaluated. The Contractor shall furnish the Employer with copies of all such

documentation and shall be held responsible for any disturbance and damage to such structures, services, buildings and property arising from the performance of the contract as well as any costs involved in refuting or processing such claims.

PS 4.11 WATER, SANITATION AND ELECTRICITY FOR CONSTRUCTION PURPOSES

PS4.11.1 WATER

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

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

The potable water metered standpipe(s) must be made available to the Employer's water inspectors for purposes of reading and inspection, and failure to do so, will result in the immediate withdrawal of such potable water metered standpipe(s). The onus is on The Contractor to return such potable water metered standpipe(s) if they are found to be defective (not registering consumption). Failure to do so will result in an account being

levied, payable to and determined by the Employer. Claims for delays caused where standpipe(s) are withdrawn and/or replaced will not be considered.

The current water tariffs applicable to the Contract are available from the Employer.

PS4.11.2 SEWER

The Contractor shall provide, maintain, move to positions as required and finally remove proper sanitary accommodation at each work front. Sanitary accommodation shall be properly screened, and its use strictly enforced. The Contractor shall comply with the Employer's Sanitation General By-Laws Section 19(1) and 19(3).

The situation of sanitary accommodation prescribed in terms of the Sanitary General ByLaws shall be approved by the Employer as being convenient for the person for whose use it is intended. The sanitary accommodation provided must be adequately ventilated, properly disinfected and kept in a thoroughly clean condition at all times.

The Contractor shall bear all costs associated with the provision of sanitary accommodation. Compensation for these costs will be made under the relevant item in the Schedule of Rates.

PS4.11.3 POWER

The Contractor shall make arrangements with the relevant authority for the supply and distribution of power for purposes of this Contract, the cost of which shall be deemed to be included in the rates inserted in the Schedule of Rates.

Power used for carrying out of the works in accordance with these Specifications will not be subject to measurement or payment.

PS 4.12 SURVEY CONTROL AND SETTING OUT OF THE WORKS

The Contractor is to confirm the levels and coordinates of all benchmarks prior to commencing with construction. The Contractor shall, prior to the ordering of pipe fittings, set out the works strictly according to the Employer's construction drawings and/or site instructions.

The Contractor shall record the setting out of the works in an approved format and order all required pipe fittings accordingly.

PS5 MANAGEMENT OF THE WORKS

PS5.1 APPLICABLE SANS 1921 STANDARDS

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

PS5.2 PLANNING AND PROGRAMMING

PS5.2.1 WORK PLAN

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

a:

a) time frame;

b) description of all equipment and tools to be used;

c) list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable);

d) list of sub-contractors, schedule of work activity;

e) safety plan (clearly highlighting any potentially hazardous substances to be used);

f) traffic control plan (if applicable);

g) an environmental protection plan; and

h) contingency plans for possible problems.

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

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

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

PS5.2.2 PLANNING

The Contractor shall ensure that he:

a) is well informed with regard to the Employer's overall maintenance programme and avail resources as required to efficiently complete this Contract; and

b) delivers goods and services timeously to meet the Employer's prevalent performance standards and where applicable to not unnecessarily delay any other contractors, service providers and suppliers.

PS5.2.3 PROGRAMMING

In order to ensure a clear understanding, at the inception of the Contract, of the programming and documentation format requirements, the Contractor shall appoint a project programmer/ planner for liaison during the Contract. The Contractor shall for

the Contract Period provide and regularly update (maximum monthly) a Contract Programme.

The programme shall at minimum contain:

a) Time Scale (minimum):

   i) Days, where the period does not exceed three months. Weeks, where the project period exceeds three months.

   ii) Months, where the period does not exceed one year.

   iii) Years, where the project period exceeds one year

b) Tasks: Where phases or stages are anticipated, this shall be the highest level of division and all tasks related to the successful accomplishment of that phase of the area shall be grouped. Resources allocation and task dependency shall be indicated.

c) Start and Finish Dates: All tasks shall have specific start and finish dates.

d) Critical Path: All tasks forming the programme line that will establish any delays in the overall Contract Period shall be clearly indicated and an indication of their sensitivity characteristics shall be provided.

e) Progress Tracking: The Contractor shall be required to periodically indicate progress per task graphically and on a percentage basis.

f) Non-working Time: All South African public holidays, weekends and the local traditional annual builder's break shall be incorporated in the programme.

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

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

***NOTA BENE*: A Contract programme shall be submitted no later than 7 days after Contract Commencement Date.**

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

a) sequence of the works for the relevant works area;

b) target dates for the tasks identified in sequence of the works for the relevant works area;

c) materials requirements;

d) construction Plant to be used;

e) services affecting construction; and

f) any factors that could affect construction progress after commencement.

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

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

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

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

PS5.3 SEQUENCE OF THE WORKS

The sequence of works to be executed shall be agreed between the Engineer and the Contractor. It is envisaged that the visual stormwater drainage surveys shall be

executed, and its findings shall determine the order of the other works. Also see 'Prioritising works' in the Contract Data section.

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

PS5.4 SOFTWARE APPLICATION FOR PROGRAMMING

The construction programme shall be completed in Microsoft ® Project Standard 2010 or compatible software. The construction programme and updated versions thereof shall be made electronically available to the Engineer.

PS5.5 METHODS AND PROCEDURES

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

PS5.6 QUALITY PLANS AND CONTROL

The Contractor shall be required to provide and maintain a quality plan to ensure that the quality of all work components is of a high standard.

PS5.6.1 CONTROL SAMPLE PHOTOGRAPHS AND/OR VIDEO PRINTS AND/OR RECORDINGS

If, in the opinion of the Engineer, any video prints and/or recordings fall significantly below the standard of the tender stage submitted samples, that part of the survey in question shall be re-surveyed, at the expense of the Contractor.

PS5.6.2 PIPE CONDITION ASSESSMENT

The accuracy of the pipe condition assessment coding system shall be highly reliant on the skill of the surveyor who conducts the survey and produces the report. Thus, the Contractor shall have a quality system that continuously monitors the standard of coding.

The procedure of this system shall be agreed with the Engineer, who shall specify the level of accuracy required prior to the Contract commencement.

The system shall measure the accuracy of reporting and in particular the:

a) number of defects/features not recorded (omissions)

b) correctness of the coding and classification of each defect/feature recorded.

PS5.7 ACCOMMODATION OF TRAFFIC ON PUBLIC ROADS

PS5.7.1 ACCOMMODATION OF TRAFFIC

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

PS5.7.2 ACCESS TO PROPERTIES

Adequate access shall at all times be maintained to public and private properties unless otherwise arranged and approved. Details of the proposed means of access shall be submitted before any such access is restricted. Claims arising from impeded access shall be the responsibility of the Contractor. At least 7 days before commencing any work affecting access to a property, the Engineer and the occupier/owner of each such property shall be notified of the Contractor's intention to commence work, the date of commencement, expected duration and arrangements which will be made regarding maintenance of access.

PS5.7.3 TRANSPORT DEPARTMENT REQUIREMENTS

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

PS5.8 OTHER CONTRACTORS ON SITE

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

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

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

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

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

The Contractor shall, when submitting any work to the Engineer for examination, satisfy himself by testing, measurement and otherwise as may be necessary that the work does in fact meet with the requirements of the Specifications. This information shall be submitted with the Contractor's request for examination and the Engineer shall be authorised to decide on the number and type of tests, measurements, etc. required to enable him to judge the quality of the work. The submission of this information shall in no way diminish the authority of the Engineer to conduct such tests as he may consider necessary in order to determine the quality of the work performed by the Contractor, nor shall he be bound to take account of the Contractor's tests, measurements, etc. should he consider these to be either incorrect or not representative.

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

PS5.10 RECORDING OF WEATHER AND ABNORMAL RAINFALL

If during the time for completion of the works or any extension thereof abnormal rainfall or wet conditions shall occur, then an extension of time in accordance with clause 45 hereof shall be granted by the Employer calculated in accordance with the formula given below for each calendar month or part thereof.

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

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

For purposes of the contract Nn, Rn, X and Y shall have those values assigned to them in the Appendix and/or the Specification.

The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for part of a month to be calculated using pro rata values of Nn and Rn.

This formula does not take account of flood damage that could cause further or concurrent delays and will be treated separately as far as extension of time is concerned.

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

The following average rainfall figures are applicable:

INFORMATION SOURCE: South African Weather Service
Pretoria

STATISTICAL INFORMATION: Volksrust Weather Station: 2000-2020		
Month	**RAINFALL**	
	Nn = Actual number of days during the calendar months in which a rainfall of more than Ymm has been received	**Rn Average monthly rainfall**
January	10.4	115.2
February	9.7	111.7

March	12.3	94.3
April	3.3	87.12
May	1.6	68.7
June	0.8	21.2
July	0.7	15.3
August	1.1	6.7
September	2.2	24.3
October	6.2	84.2
November	8.7	119.4
December	8.6	126.1
TOTAL	**64.8**	**786.3**

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

a) Contract manager;

b) Site Agent;

c) Quality Manager/Auditor/Controller;

d) CCTV camera Operators;

e) Health and Safety Officer/s; and

f) Foremen.

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

PS5.13 MANAGEMENT MEETINGS

Fortnightly site meetings shall be arranged and facilitated by the Engineer. Senior Contractor management staff attendance shall be compulsory.
The Contractor shall be required to provide reporting with regard to project progress, resources (human, plant and equipment), community issues, environmental and health and safety aspects.

PS5.14 FORMS FOR CONTRACT ADMINISTRATION

The Contractor shall maintain a file which shall contain project information related to project progress, resources (human, plant and equipment), community issues,

environmental, health and safety aspects, penalties imposed, claims lodged and outcomes, disputes and resolutions, payment and variations.

PS5.15 DAILY RECORDS

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

PS5.16 BONDS AND GUARANTEES

In addition to GCC Clause 7, the Contractor shall provide the Form of Guarantee for the due and punctual fulfilment and completion of all the Contractor's obligations under the Contract. No extension of time of the Contract Period of Performance or any variation of the Contract nor the determination of the Contract by the Employer in terms of Clause 58 hereof shall in any way impair or diminish or terminate any liability to the Employer under and by virtue of such Guarantee.

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

(a) Grant the Contractor a further reasonable period in which to provide the bond; or

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

PS5.17 PAYMENT CERTIFICATES

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

PS5.18 PERMITS

Refer to PS 4.8

PS 6

FEATURES REQUIRING SPECIAL ATTENTION

PS6.1 SECURITY

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

a) as he deems necessary. The Employer shall not be held responsible for any loss

or damage(s) suffered by the Contractor, his plant, equipment, materials,

Subcontractor (s) or employees because of a security incident of any nature.

b) which have been identified, by the Employer, as potential high-risk areas requiring security during site visits for the duration of the contract. The Contractor shall arrange that the security meet with the Employer representative at a convenient and safe location and thereafter escort to the necessary areas.

PS6.2 OPERATION OF VALVES

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

PS6.3 WORK OUTSIDE NORMAL WORKING HOURS

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

PS6.4 SANITARY FACILITIES

The Contractor is required to supply adequate sanitary facilities for employees, visitors, and Employer.

PS6.5 COMMUNITY LIAISON AND COMMUNITY RELATIONS

For the purpose of this project a community liaison officer will be required; who shall be required to inform the community with regards to The Contractor ’s activities in particular where such activities may affect the service provision to the affected community (See PS6.6).

PS6.6 NOTICES AND WARNING TO CONSUMERS

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

a) The maximum amount of time of no service shall be 8 hours for any property. Any service disruption longer than 8 hours shall be temporary bypassed by methodologies approved by the Employer's authorized representative

b) A Public Notification Program shall be implemented, requiring at minimum that The Contractor shall deliver written notices to each domestic and non-domestic customer affected by the works, 48 hours before commencement of the works, including providing:

i) a summary of work to be completed;

ii) the time and duration of service interruption; and

iii) a local telephone number to contact The Contractor for inquiries or complaints. All

complaints received shall be addressed and resolved within the standard Employer response times and a summary of such complaints and associated actions shall be presented to the Employer's authorized representatives on a monthly basis.

PS6.8 CONDITIONS AND PROCEDURES FOR SERVICE AGENCIES

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

PS6.9 REINSTATEMENT OF ASPHALT

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

a) indicated that it will not, for whatever reason, be able perform such asphalt resurfacing; and

b) is the cause of delays, where in particular The Contractor shall note that the Employer shall not be liable of any additional extension of time related cost obligations to the Contractor, as he shall be deemed have agreed adequate conditions with the Municipality and allowed delays on the part of the Employer.

PS6.10 GENERIC LABOUR-INTENSIVE SPECIFICATIONS

EPWP guidelines shall not be applicable to this Contract, although it is expected that The Contractor execute the majority portion of the works utilizing unskilled labour and skilled labour.

PS6.11 CAUSES FOR REJECTION

Causes for rejection shall include, but not be limited to, not complying to the Employer's requirements and/or specifications and the intended purpose for this Contract, thus:

a) poor data (including photographs, recording, prints and reports) and data management;

b) inaccurate surveys, with regard to linear meterage of manhole length;

c) poor quality of survey information;

d) silt, grease, and debris remaining in conduits after cleaning; and

e) poor quality construction and remedial works:

i)Cracks in any concrete works or pre-cast units shall be cause for rejection.

ii)honeycombed or patched areas in any concrete works or pre-cast units in excess of $0.02m^2$ shall be cause for rejection.

PS6.12 PROTECTION AGAINST WATER AND STORMS

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

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

PS6.13 INFORMATION SUPPLIED BY THE EMPLOYER

Certain information included in this document or supplied separately is presented in good faith and no guarantees can be given regarding the accuracy or representativeness thereof. This pertains more specifically to all soil tests, material results and similar information that are necessarily subject to limitations in the test methods and sampling. Natural variations in materials and formations also influence the applicability of certain conclusions.

The Employer can therefore not accept any responsibility for the accuracy of any information or for any damage resulting from the fact that the information later proved

wrong or not representative. If the Contractor chooses to rely on the information he does so at his own risk.

PS6.14 INDEMNITY CERTIFICATE

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

PS6.15 RETURN OF MATERIALS

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

PS6.16 POLITICAL AND COMMUNITY UNREST

The Contractor shall make allowance for all costs which might arise due to the interruption of works and / or standing time in terms of political and / or community unrest on the Contract. Only if a situation gives rise to more than four (4) hours per day, for normal working hours only, of non-working progress on the Contract Area will such situation be considered an unre The Contractor shall notify the Employer or his duly Authorized

Representative of any unrest situation and shall indicate all active Contract sites affected.

PS 7 HEALTH AND SAFETY SPECIFICATION FOR CONSTRUCTION WORK

The Occupational Health and Safety Specification of the Employer is bound in Volume 2 of these contract documents. Volume 2 forms an integral part of the Contract Specification and, in particular, shall be a part of the HEALTH AND SAFETY SPECIFICATION FOR CONSTRUCTION WORK.

In terms of Construction Regulations 4 (1) (a) of the Occupational Health and Safety Act, Act No 85 of 1993, the Employer is required to compile an occupational health and safety specification for any intended project and to provide the specification to prospective Contractors.

st situation payable to The Contractor under this item.

The objective of this specification is to ensure that the principal The Contractor entering into a contract with the Employer achieves and maintains an acceptable level of occupational health and safety performance.

The specification provides the requirements that the principal The Contractor and other The Contractor s shall comply with in order to reduce the risks associated with the contract work, and that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

The Contractor, appointed by the Employer in terms of Regulation 4 (1) (c), is required to prepare an occupational health and safety plan.

This plan has to be prepared in terms of Regulation 5 (1) as well as the Employer's occupational health and safety specification. In terms of Regulation 4 (2), the Employer and the principle The Contractor are required to agree on the occupational health and safety plan before any work may commence.

The principal The Contractor 's health and safety plan have to follow the framework in Volume 2, as a minimum.

PS 7.1 SITE SPECIFIC HEALTH AND SAFETY ISSUES

Please refer to Volume 2 of The Occupational Health and Safety Specification of the Employer for site specific assessment of health and safety issues including a list of risk assessment headings that have been identified by the Employer as possibly applicable to the contract work for this project.

PS 7.2 BARRICADING OF TRENCHES

The Contractor shall ascertain himself of the nature, volume, stability, depth and possible safety risks of the excavations, before any decision with regards to the method of excavation is made.

Allowance for hand excavation has been made for the location of services. Extreme caution shall be taken when excavating along the route of the new pipe for existing services. Any damages and or repairs to the existing services will be for the Contractor ‘s account.

The length of open excavation must at all times not exceed 100m

Adequately protected by a barrier or fence comprising fluorescent orange plastic netting of height at least 1 000mm and as close to the excavation as practicable; and

- Provided with notice boards marked “CLOSED” at each end of closed or partially closed roads,
- The barrier or fence (at least 1m high) shall be suitably wrapped with reflective red and white danger tape or provided with flashing orange lights, placed at 15m intervals along the barricading at night.
- Where the depth of an excavation or the nature of the material excavated renders the sides of the excavation liable to movement that might endanger the works, or the workers engaged on the excavation,
- the sides of the excavation shall be supported by suitable timber or other sheeting adequately strutted and braced, all properly assembled and of sufficient strength and stiffness to prevent movement in the materials supported, or, alternatively,
- the slope of the excavated face or faces shall be reduced so that any danger to the works or workers is removed.
- Any cavities formed by the fall of rock or earth due to rain, flooding, insufficient timbering or other causes, shall be adequately filled.
- The Contractor shall so maintain borrow pits that they do not become a danger to persons or livestock.
- Trenches may not be left open during the builder's holidays or for any shutdown period exceeding 5 calendar days. Should the Contractor not comply with this requirement without the written approval of the Employer; the Employer shall have the open trenches closed by others at the expense of the Contractor. Furthermore,

all further opening-up of the backfilled excavation and dealing with the excavated material and subsequent making good will all be to the Contractor ‘s cost.

- **PS 7.3 PRECAUTION AGAINST POLLUTION AND CONTAMINATION**
- The Contractor shall take all necessary steps and precautions to prevent pollution of the surrounding area by his employees in any way. Any debris falling from construction vehicles and plant shall be removed immediately.
- Every care is to be taken to avoid possible contamination of the mains during construction. Pipes are not to be stacked in the streets or gutters. On completion of a section, all loose material and foreign bodies are to be removed. The open ends of the new pipeline are to be protected by watertight caps, to the satisfaction of the Employer, to prevent the entrance of groundwater and foreign bodies until such time as these sections are connected to the live mains.

Sterilizing chemicals shall be supplied by The Contractor for sterilizing all new water mains. All new lines are to be thoroughly flushed. All sterilization shall be done at 10mg/ℓ free chlorine for 12 hours. The Contractor shall give due notice to The Employer of his intention.

PS 7.4 Operations under Live Conditions

Prior to the execution of any operation under live conditions, The Contractor shall liaise with the relevant Municipality at least 7 working days in advance, in this regard. At least one representative of the Municipality shall be present during the execution of such operation. These operations will include disconnection and reconnection to the existing Sewer/ Storm water main and Water storage tank at the works.

PS 8 ENVIRONMENTAL MANAGEMENT

- The Contractor is to adhere to the mitigation measures listed in the EMP (refer to Volume 2: Occupational Health and Safety Specification and Environmental Management Plan.

- Environmental mitigation measures are actions needed to align a project implementation phase with environmental control principles, where potential impacts to the natural and social environment are prevented, minimised or remediated. Environmental safeguarding is governed by various sets of legislation, with the most noteworthy for this project constituting the National Environmental Management Act (No. 107 of 1998) and the National Water Act (No. 36 of 1998).

- **PS 9 VALVES**
- i. Wedge type gate valves: Shall be used for and valves from sizes 200 mm and above and the valves must be as per SANS 664. (All valves greater than and equal to 300 mm should be geared).

- ii. Resilient seal gate valves: for valves sizes up to and including 150 mm;
- iii. Air release valves: single chamber, double orifice with integral anti-shock device.
- iv. Hytrol valves: can be piped as PRV's, pressure sustaining valves, level control valves, flow control valves etc. Other designs must be pre-approved;
- v. Butterfly valves: may be used in restricted areas upon approval by the Employer. Strictly not allowed in the reticulation.
- vi. Reflux valves: non-return valves must be approved by the Employer.
- Types used:
- Weighted type: used essentially in pump stations and on reservoirs and in town installations;
- Double door dampered type: used on pumping mains;

vii. Above ground hydrants: All new installations to be above ground. Underground hydrants only to be used if approved by the Employer.

PORTION B: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS

The following variations and additions to the SANS 1200 Standardized Specifications referred to in the last clause of Portion A apply to this Contract. The prefix PS indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200.

PSA GENERAL

PSA 2 INTERPRETATIONS

PSA 2.3 DEFINITIONS

a) General

ADD THE FOLLOWING DEFINITIONS:

"General conditions: The General Conditions of Contract specified for use with this Contract and the special conditions of Contract as applicable.

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

b) Measurement and payment

REPLACE THE DEFINITIONS FOR "fixed charge", "time-related charge" *AND* "valuerelated charge" *WITH THE FOLLOWING*:

"Fixed charge: A charge that is not subject to adjustment on account of variation in the value of the Contract amount or the Contract Time of Completion.

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

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

PSA 3 MATERIALS

PSA 3.1 QUALITY

ADD THE FOLLOWING:

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified in accordance with SANS Specifications shall bear the SANS mark, whether so specified or not."

ADD THE FOLLOWING SUB-CLAUSE:

PSA 3.3

ORDERING OF MATERIALS

The quantities set out in the Schedule of Quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be approximate quantities only. Before ordering materials of any kind The Contractor shall check with the Employer whether or not the scope of the work for which the materials are required is likely to change substantially. No liability or responsibility whatsoever shall be attached to the Employer for materials ordered by The Contractor except when ordered in accordance with written confirmation issued by the Employer."

PSA 4 PLANT

PSA 4.1 SILENCING OF PLANT

REPLACE THE CONTENTS OF SUBCLAUSE 4.1 WITH THE FOLLOWING:
"The Contractor 's attention is drawn to the applicable regulations pertaining to noise and hearing conservation, framed under the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended.

The Contractor shall at all times and at his own cost, be responsible for implementing all necessary steps to ensure full compliance with such regulations, including but not restricted to the provision and use of suitable and effective silencing devices for pneumatic tools and other plant which would otherwise cause a noise level in excess of that specified in the sai Where appropriate, The Contractor shall further, by means of temporary barriers, effectively isolate the source of such noise in order to comply with the said regulations."

PSA 5 CONSTRUCTION

PSA 5.1 SURVEY

PSA 5.1.2 PRESERVATION AND REPLACEMENT OF SURVEY BEACONS AND PEGS SUBJECT TO THE LAND SURVEY ACT

*DELETE THE WORDS "*in the vicinity of boundaries*" IN THE SECOND SENTENCE OF SUBCLAUSE 5.1.2 AND REPLACE THE WORDS "*under the direction of*" IN THE SAME SENTENCE WITH* "in consultation and liaison with."

ADD THE FOLLOWING AFTER THE SECOND SENTENCE OF SUBCLAUSE 5.1.2:

d regulations.

"The Contractor and the Employer shall record on the said list, their concurrence or disagreement (as the case may be) regarding the completeness and accuracy of the details recorded therein."

REPLACE THE THIRD SENTENCE OF SUBCLAUSE 5.1.2 WITH THE FOLLOWING

"At the completion of the Contract, The Contractor shall expose all pegs that were listed at the commencement of the construction as being in order and The Contractor shall arrange with a registered Land Surveyor for the checking of the positions of all such pegs and the replacement of those that the Land Surveyor's check reveals have become disturbed or damaged. The Contractor shall, as a precedent to the issue of the Certificate of Completion, provide to the Employer, a certificate from the registered Land Surveyor, certifying that all the pegs listed at the commencement of construction in accordance with the provisions of this clause, have been checked and that those found to have been disturbed, damaged or destroyed have been replaced in their correct positions, all in accordance with the provisions of the said Act.

The costs of all checking, replacement and certification as aforesaid shall be entirely for the Contractor 's account. This, with the provisions always that The Contractor shall not be held liable for the cost of replacement of pegs which:

(a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the permanent works, and

(b) The Contractor can prove beyond reasonable doubt to the satisfaction of the Employer, were disturbed, damaged or destroyed by others beyond his control."

PSA 5.3 PROTECTION OF EXISTING STRUCTURES

REPLACE "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)*" WITH "*Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended,*" AND INSERT THE FOLLOWING AFTER* "(Act No. 27 of 1956)": "as amended."

PSA 5.4

PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

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

PSA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

PSA 5.4.1 LOCATION OF EXISTING SERVICES

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

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, The Contractor shall, in collaboration with the Employer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. The Employer offers no warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, The Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, The Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Employer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of sub-Clauses 4.4 of GCC 2015 and 5.1.2.2 of SANS 1200 D (as amended) shall apply.

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

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as ‘known services and their positions shall be indicated by The Contractor on a separate set of drawings, a copy of which shall be furnished to the Employer without delay.

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

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

(a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognizance being taken of such deviations in line and level which may reasonably be anticipated, and

(b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause.

(c) The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor ’s operations or by the lack of proper protection.

(d) No separate payment will be made to The Contractor in respect of any costs incurred in preparing and submitting to the Employer the Drawings as aforesaid. These costs shall be deemed included in the Contractor ’s other tendered rates and prices included in the Contract.

(e) Payment to The Contractor in respect of exposing services at the positions agreed by the Employer and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

(f) PSA 5.4.2 PROTECTION DURING CONSTRUCTION

(g) The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which The Contractor has occupation and/or possession of the Site.

(h) Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising there from to the public and/or

workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

(i) Unless otherwise instructed by the Employer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of Subclause 5.9 of SANS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

(j) PSA 5.4.3 ALTERATIONS AND REPAIRS TO EXISTING SERVICES

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

(l) Should damage occur to any existing services, The Contractor shall immediately inform the Employer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, The Contractor shall take appropriate steps to minimize damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

PSA 6 TOLERANCES

ADD THE FOLLOWING SUBCLAUSE TO CLUASE 6:

PSA 6.4 USE OF TOLERANCES

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

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

If work is constructed in accordance with the ‘authorized’ dimensions plus or minus the tolerances allowed, the calculation of quantities will be based on the ‘authorized’ dimensions, regardless of the actual dimensions to which the work has been constructed.

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

PSA 7 TESTING

PSA 7.2 APPROVED LABORATORIES

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

(a) Any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;

TS OF SUBCLAUSE 7.2 WITH THE FOLLOWING:

(b) Any testing laboratory owned, managed or operated by the Employer;

(c) Any testing laboratory established and operated on the Site by or on behalf of the Employer;

(d) Any other laboratory that the Employer approves in his absolute discretion."

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 MEASUREMENT

PSA 8.1.2 PRELIMINARY AND GENERAL ITEM OR SECTION

PSA 8.1.2.1 CONTENTS

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

"Separate items will be scheduled to cover the fixed, value-related and time-related components of the Contractor 's preliminary and general costs."

PSA 8.2 PAYMENT

PSA 8.2.1 FIXED-CHARGE AND VALUE-RELATED ITEMS

REPLACE THE CONTENTS OF SUBCLAUSE 8.2.1 WITH THE FOLLOWING:

PSA 8.2.1.1 FIXED-CHARGE ITEMS

Payment of fixed charges in respect of item 8.3.1 will be made as follows:

(a) EIGHTY PER CENT (80%) of the sum tendered will be paid when the facilities have been provided and approved;

(b) The remaining TWENTY PER CENT (20%) will be paid when the works have been completed, the facilities have been removed and the site of the Contractor 's establishment has been cleared and cleaned to the satisfaction of the Employer.

No adjustment will be made to the sum tendered in respect of item 8.3.1 should the value of the works finally executed or the time for completion vary in any way from that specified in the tender."

PSA 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED CHARGE

ADD THE FOLLOWING NEW SUBCLAUSES TO CLAUSE 8.3

PSA 8.3.5 ADDITIONAL CONTRACTUAL OBLIGATIONS

PSA 8.3.5.1 Notice and warning to consumers ……..…Unit: Sum

The sum shall cover the full compensation and cost of supply and delivery of the notices and warnings to customers at least 3 days before a shutdown is to take place in each section of work.

PSA 8.3.5.2 OHS Act Obligations ……...Unit: Sum

The sum shall cover the full compensation and fixed costs for the compliance with the Occupational Health and Safety Act, Construction Regulations 2003 and all the requirements stipulated in the Employer's Health and Safety Specifications."

PSA 8.3.5.3 EMP Obligations …… Unit: Sum

The sum shall cover the full compensation and all fixed costs for compliance with the requirements of The Employer's Environmental Management Plan.

PSA 8.4

SCHEDULED TIME-RELATED ITEMS

ADD THE FOLLOWING NEW SUBCLAUSES TO CLAUSE 8.4.

PSA 8.4.6 Additional Obligations

PSA 8.4.6.1 OHS Act Obligation……...Unit: Month

The sum shall cover the full compensation and all-time related costs for the duration of the contract, for the compliance with the Occupational Health and Safety Act, Construction Regulations 2003 and all the requirements stipulated in the Employer's Health and Safety Specifications. The cost shall include the salary for a full time OHS Officer for the project.

PSA 8.4.6.2 Security services costs…….……...Unit: Month

The sum shall cover the full compensation and all costs for a sufficient 24 hour guarded services for the duration of the contract.

PSA 8.4.6.3 Community Liaison Officer …… Unit: Stated Sum

The stated sum shall cover full compensation and all costs payable monthly, to provide a full time qualified and suitable experienced Community Liaison Office for the duration of the contract. The stated sum shall also cover for the CLO cellphone airtime.

PSA 8.5 SUMS STATED PROVISIONALLY BY EMPLOYER

AMEND SUBCLAUSE 8.5.b)1 AND ADD THE FOLLOWING ITEMS:

i) Alteration to existing services by authorities……Unit: Stated Sum

ii) Control tests by independent laboratory ……. ….. Unit: Stated Sum

iii) Provision of photographic records ……Unit: Stated Sum

iv) CLO and CSO…….. Unit: Stated Sum

v) Temporary protection of services……. Unit: Stated Sum

vi) Pipeline Cathodic Protection……. Unit: Stated Sum

vii) Reinstatement of asphalt …….. Unit: Stated Sum

The Contractor is responsible for both the cost of normal testing as described in the Project Specifications and for the cost of any additional test that indicates that the Specifications have not been complied with."

These sums will be paid to The Contractor in equal monthly amounts."

PSA 8.7 DAYWORKS

ADD THE FOLLOWING NEW CLAUSES:

PSA 8.7.1 SCOPE

This section covers the method of measurement and payment for work carried out on a day work basis.

PSA 8.7.1.1 GENERAL REQUIREMENTS

Work will be classified as day work only if the Employer considers no other rate in the Bill of Quantities appropriate for payment purposes.

An instruction regarding all work to be carried out under day work in terms of Clause 6.5 of the General Conditions of Contract 2010 will be issued at the discretion of the Employer. Some or all the items priced under day work in the Bill of Quantities may possibly not be required for this Contract.

Before ordering any material, The Contractor shall submit quotations to the Employer for his approval and shall submit such receipts or vouchers to the Employer as may be necessary for proving the amount claimed.

PSA 8.7.1.2 MEASUREMENT AND PAYMENT - DAY WORKS

The day work rates submitted for vehicles and construction equipment, in the Bill of Quantities shall be a hire charge for the use of the vehicle and driver or constructional plant/equipment and operator (excluding VAT) and shall apply only to vehicles and construction equipment approved in writing by the Employer. The rate shall include for maintenance, fuels and oils and other operating costs, establishment, insurance and other contingency costs relating to the running of the vehicle, plant or equipment.

Where there is ambiguity between the power developed at the flywheel and mass of a machine, the power shall govern the measurement category.

The Contractor and the Employer will agree on the method of recording the working hours prior to the commencement of the work. Any extended period of idling at any one time which in the opinion of the Employer or his representative is beyond that required for normal operating conditions will not be paid for as working time. Non-working hours for any reason shall not be measured for payment.

The ten percent allowed for overheads etc. as per Clause 6.5.1.2.3 of the General Conditions of Contract 2010 shall include full compensation for all administrative costs, supervision, overheads, liabilities and obligations related to the running of the vehicles, constructional plant and equipment. The tendered percentage shall also include for profit and shall be subject to the Contract Price Adjustment factor laid down in the Contract Data.

PSA 8.8 TEMPORARY WORKS

PSA 8.8.4 EXISTING SERVICES

AMEND THE SUB CLAUSE AS FOLLOWS:

PSA8.8.4 a) Supply or hire of specialist equipment ……. …. Unit: Sum

The sum shall cover the cost for the supply, operation and/or hire of specialist equipment for detection of underground services as ordered by the Employer.

PSA 8.8.4 b) Excavate by hand in soft material to expose existing services……. Unit: m^3

The rate shall cover the cost for removal of premix or other surfacing where necessary, excavating in all materials, shoring, backfilling, compaction and reinstatement of surfaces except for asphalt.

PSA 8.9 STANDING TIME……Unit: hour

Rate to include all costs The Contractor incurs on an hourly basis (labour, plants, equipment, security, offices, supervisory staff and other time related costs). Standing time will be paid to The Contractor in a case where there are delays from the Employer in providing information or instruction and where The Contractor have no work to be undertaken during that period. The standing time rate for equipment will be taken as the dayworks rates less 10% for fuel.

PSAB EMPLOYER'S OFFICE

PSAB 3 MATERIALS

PSAB 3.1 NAMEBOARDS

DELETE THE ENTIRE CLAUSE AND REPLACE WITH:

"The name board shall be of either tempered hardboard at least 12mm thick or steel sheeting so braced on the reverse side as to prevent warping or buckling and shall be mounted on two or more firmly planted poles as necessary. The quality of the paint shall conform to SANS Standard Specification CKS 193. The colour of the paint shall

conform to SANS 1091-1975 colour F11, strong blue. The Employer's SOC Ltd logo shall be in colour. The height of the larger name board shall be 2400mm and the width 4800mm, whilst the height of the smaller name board shall be 800mm and the width 1600mm".

PSAB 3.2 OFFICE BUILDING(S)

Delete this sub-clause entirely and re-title the sub-clause "FACILITIES FOR THE EMPLOYER"

Add the following sub-clause.

PSAB 3.2.1 OFFICE BUILDING(S)

The Contractor shall provide, furnish and equip one or more offices (as scheduled) for the use of the Employer.

The Contractor shall provide, furnish and equip one or more offices (as scheduled) for the use of the Employer.

The Contractor shall provide and furnish one office for the use of the Employer. Each office shall consist of one room with a floor area of at least 12 m^2 and a ceiling height of at least 2.5 m.

Each office shall be weatherproof, shall have a wooden boarded floor that is at least 150 mm above the ground, and shall be provided with a ceiling and a lining to the walls, or equivalent insulation, with an acceptable type of door with a secure lock, and two opening windows of glazed area at least 3 m^2. Each office shall be well ventilated and shall be so insulated as to provide comfortable working conditions.

Office building shall be painted with an approved paint after erection and the paintwork shall be maintained during the contract period.

Each door shall be provided with a lock and two keys.
The sitting of all offices shall be to the Employer's satisfaction and shall be decided upon in consultation with him/her and confirmed in writing before erection. All accommodation shall include the provision of access roads where required, fresh clean portable water and sewerage, which will be considered as part and parcel of the accommodation provided and will not be paid for separately.
All accommodation shall meet with the approval of the Employer.

The offices shall comply with the following requirements.

Dimensions	Type 1 Office	Type 2 Office
Minimum floor area	20 m^2	12 m^2
Minimum window area	4.0 m^2	3.0 m^2
Minimum window area opening	2.4 m^2	1.5 m^2
Minimum clear height	2.5 m	2.5 m
Shaded parking for vehicles	2	2

Furniture and Equipment

Each office shall be equipped with the following:

i. Office desk with a surface area of at least 1.5m^2 with at least 3 drawers one of which can be locked. ii. Two office chairs.
iii. a lockable upright steel cabinet with three shelves or a steel filing cabinet with four drawers
iv. Refrigerator
v. Printer

vi. Enough racks and hangers for hanging contract drawings. The hangers shall be of the "Bar hold" type, with one hanger to five drawings.

vii. Double 80-watt fluorescent light fittings complete with ballast and tubes (2 per Type 1 office, 1 per Type 2 office).

In addition to the above the Type 1 office shall be equipped with the following:

i. Conference table large enough to accommodate twelve people and have an area of at least 15m^2. Fifteen office chairs

The Contractor shall also supply a toilet for the exclusive use of the Employ er. The Contractor must provide basic survey instruments: dumpy level, tripod stand and staff.

On completion of the Works, ownership of the buildings, furnishings and equipment shall revert to The Contractor who shall remove them from the Site.

PSAB 3.3 CARPORT

ADD THE FOLLOWING NEW CLAUSE:

The Contractor shall construct the number of carports specified in Portion A of the Project Specifications, for the sole use of the Employer and his staff. Each carport shall be constructed so that the vehicle parked under it is always protected against the direct rays of the sun. The carport area shall be at least 20 m² and the floor shall be covered with a layer of crushed stone to alleviate dusty and muddy conditions. The carport(s) shall be positioned to provide easy and convenient access to the Employer's office.

PSAB 4 PLANT

PSAB 4.1 TELEPHONE

REPLACE SUBCLAUSE 4.1 OF SANS 1200 AB WITH THE FOLLOWING:

"The Contractor shall arrange for the provision of an approved cellular phone and airtime and data bundles per month for the Employer's representative. The Contractor at the tendered rates under the relevant scheduled item shall recover the associated charges and telephone calls and data bundles associates with the contract.

PSAB 4.2 SURVEY EQUIPMENT

ADD THE FOLLOWING NEW CLAUSE:

The Contractor shall provide on-site and make available for the exclusive use of the Employer and his staff, the survey equipment listed in Portion A of the Project Specifications.

All survey equipment provided by The Contractor shall be in good condition, properly calibrated and fit for the purpose.

In addition to survey equipment provided by The Contractor for the exclusive use of the Employer and his staff, The Contractor shall make available for use by the Employer, the further survey equipment listed in Portion 1 of the Project Specifications, at all times when such is reasonably required by the Employer and his staff for the purposes of the Contract."

PSAB 4.3 COMPUTER FACILITIES

ADD THE FOLLOWING NEW CLAUSE:

The Contractor shall, for the duration of the Contract, provide the computer equipment complete with printer, modem and telephone connection including 3G connection together with the software specified hereunder, for the exclusive use of the Employer and his staff:

a) 1 laptop

b) 1 printer

The laptop shall comply with the following minimum specifications: The laptop shall comply with the following minimum specifications:

Lenovo ThinkPad T540P Intel Core 17-4700MQ, 8GB, 1TB, DVD+-RW DL, 15.6FHD (1920X1080), NVIDIA 1GB, 3
WAR: 3 Year on-site Warranty upgrade
Mem: Lenovo 8GB DDR3L 1600 (PC3-1280D) 50 DIMM Memory

Dock: ThinkPad Pro Dock-65W-South Africa

Printers shall, unless otherwise approved by the Employer, be SamsungSCX-4600 Colour Laser Printer Series or equivalent compatible.

All computer hardware shall be provided complete with the requisite connecting cables and all interfacing devices and software necessary for its efficient operation as an integral system.

The following software shall be professionally installed on the computer, and the original license agreements and disks shall be provided to the Employer for safekeeping:

- Microsoft Windows 10
- MS-Office 2020
- MS Projects 2010

All computer equipment provided shall always be kept fully serviceable by the Contractor. The Contractor shall have any defective equipment repaired or replaced at his own cost within 12 hours after notification by the Employer's staff.

PSC 8.2.5 TAKE DOWN EXISTING FENCES:

(a) Description of fence ……..... Unit: m or km

(b) Etc. for other items

The unit of measurement shall be the metre or kilometer of fence taken down and removed from the site.

The rate shall cover the cost of taking down the complete fence (fence height up to 2m) as scheduled and removing all fence material from the site, filling of holes, leveling ground surfaces and cleaning the site as well as providing temporary fence during construction.

PSC 8.2.8 DEMOLISH AND REMOVE STRUCTURES/BUILDINGS AND DISMANTLE STEELWORK, ETC.

REPLACE "Unit: sum" *WITH* "Unit: sum or number of m²". REPLACE THE LAST SENTENCE WITH:

"The rate shall cover the cost of all such separate items as scheduled in the Schedule of Quantities."

ADD THE FOLLOWING ITEMS:

PSC 8.2.11A TEMPORARY FENCING OR HOARDING:

(a) Indicate temporary usage, description and type …… Unit: m (b)

Etc. for other usage and types.

The unit of measurement shall be the linear metre of fence or hoarding supplied and erected, and in the case of temporary fencing for maintaining and removing on completion of the works or part of the works.

The tendered rate shall include full compensation for the cost of supplying and erecting the complete fence as specified or scheduled and in the case of temporary fencing for taking down the fences, removing from the site, filling of holes, leveling ground surfaces and cleaning the site.

Seventy per cent (70%) of the tendered rate shall be payable on completion and approval of the temporary fences, and the remaining thirty per cent (30%) on completion of the removal of the fences.

PSC 8.2.11B REMOVAL OF MAN-MADE SURFACES

The rate shall cover all plant, labour, material, saw cutting (asphalt and concrete), breaking up, lifting, loading, transportation, off-loading surfacing and storing (where applicable).

Unit: m²

Roadways, Asphalt and other layers

i) Asphalt (≤ 50mm thick) and including base, sub-base and subgrades layers up to 800mm deep. ii) Asphalt (> 50 ≤ 100mm thick) and including base, sub-base and subgrades layers up to 800mm deep.

a) Footways and driveways

Asphalt ≤ 50mm thickness

Asphalt > 50 ≤ 100mm thickness

Interlocking concrete segmental paving blocks (all color)

Concrete slabs (450 x 450mm)

Brick paving

Unreinforced concrete ≤75mm thick

Reinforced concrete ≤75mm thick

Grassing

Kerbing (all types of kerbing) …….. (Unit: m)

PSC 8.2.12 BACKFILLING AND REINSTATEMENT OF MAN-MADE SURFACES

The rate shall cover the cost of all associated plant, labour, material, loading, transportation from storage, off-loading and placing (levelling and compacting where applicable) the following materials in roadways, footways and driveways in accordance with the COP:

PSC 8.2.12.1 BACKFILLING AND REINSTATEMENT OF ROADS

Unit:m²

a) Scenario A

i) 150mm base – G2 Graded crushed stone to 102% Mod AASHTO density

ii) 150mm subbase – G5 Graded crushed stone to 97% Mod AASHTO density iii) 150mm Fill – G7 material compacted to 95% Mod AASHTO density iv) 150mm selected subgrade – Inset material compacted to 90% Mod AASHTO

b) Scenario B

i) 150mm base – G2 material compacted to 97% Mod AASHTO density ii) 150mm subbase – C4 Stabilized gravel material to 95% Mod AASHTO density* iii) 150mm selected subgrade - Inset material compacted to 93% Mod AASHTO *Rate shall include stabilization agent.

c) Scenario C (Foot paths)

i) 150mm base – Recovered material compacted to 93% Mod AASHTO ii) 150mm selected subgrade – Inset material compacted to 90% Mod AASHTO

d) Surfacing

i) 30mm Bitumen hot mix: Fine

ii) 70mm Bitumen hot mix: BTB

PSC 8.2.12.2 BACKFILLING AND REINSTATEMENT FOOTWAYS

Unit:m²

a) Using removed materials:

i) Interlocking concrete segmental paving blocks (all color) ii) Concrete slabs (450 x 450mm)

iii) Brick paving iv) Grassing

v) Kerbing…….... (Unit: m)

b) Using new supplied materials: Unit:m² i) 30mm Bitumen hot mix: Fine ii) Interlocking concrete segmental paving blocks, including a 20mm river sand bedding layer, jointing sand (plaster sand) and mortar infill between edge restraint and blocks

1) Grey blocks
2) Colored blocks

iii) Concrete slabs (450 x 450mm) including a 20mm river sand bedding layer, jointing mortar.

iv) Brick paving including a 20mm river sand bedding layer, jointing sand (plaster sand) and mortar infill between edge restraint and bricks.

v) Unreinforced concrete ≤ 75mm thick (15MPa) vi) Reinforced (395 mesh) concrete ≤ 75mm thick (15MPa) vii) Grassing viii) Concrete channeling, including formwork, leveling and compacting 300 x 125mm cast in situ concrete of 15MPa.

ix) Kerbing, including a 50mm bedding (cement and river sand), jointing mortar and 15MPa concrete haunching at all joints. (Unit: m)

1) Figure 1
2) Figure 7
3) Figure 8
4) Figure 12

PSC 8.2.13 REINSTATEMENT OF EXISTING MASONRY WALLS AND STEEL PALISADE FENCES

The rate shall cover the cost of reinstating existing masonry walls, plastered or unplastered, and steel palisade fences (including any gates) including plant, labour, material, on-loading, transporting, off-loading and cleaning for the following:

Unit: m^2

a) Face brick

i) 110mm wall ii) 220mm wall iii) 330mm wall

b) Plastered

i) 110mm wall
ii) 220mm wall iii) 330mm wall

c) Steel palisade fences (height = 2.1m)

PSD EARTHWORKS

PSD 2 INTERPRETATIONS

PSD 2.1 **SUPPORTING SPECIFICATIONS**

REPLACE SUBCLAUSE 2.1.2 WITH THE FOLLOWING:

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

PSD 2.3 **DEFINITIONS**

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

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

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

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

REPLACE THE DEFINITION FOR "Stockpile" *WITH THE FOLLOWING:*

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

ADD THE FOLLOWING DEFINITIONS:

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

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

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

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

PSD 3 **MATERIALS**

PSD 3.1 CLASSIFICATION FOR EXCAVATION PURPOSES

PSD 3.1.1

METHOD OF CLASSIFYING *ADD*

THE FOLLOWING:

"The classification of material other than 'soft excavation' shall be agreed upon before excavation may commence.

The Contractor shall immediately inform the Employer when the nature of the material being excavated changes to such an extent that a new classification is warranted for further excavation. Failure on the part of The Contractor to advise the Employer in appropriate time shall entitle the Employer to reclassify, at his discretion, such excavated material." *ADD THE FOLLOWING NEW SUB CLAUSES:*

PSD 3.1.3 CLASSIFICATION FOR HAND EXCAVATION

Classification of material for various types of hand excavation will be based on the results of a dynamic cone penetrometer. The category of material shall be determined by testing the material at regular intervals and at various depths along the centre line of the trench. A minimum of 5 tests shall be done at each location and the average number of blows of the tests shall be used to determine the category of material.

The interval between test locations shall be determined by the variation of material type but shall not exceed 50m. The depth of testing shall be determined by the variation of material type and can increase or decrease in hardness with increasing depth of excavation. Table PSD 3.1.3 indicates the categories:

Category of Material	**Consistency**		**DCP Blows to Penetrate 100mm**	
	Granular	**Cohesive**	**Granular**	**Cohesive**
<u>Soft</u> Soft excavation shall be excavation in material that can be efficiently removed from the trench using a pick and shovel but not requiring prior breaking using mechanical equipment such as pavement breakers	Up to medium dense	Firm to stiff	0-6	1-5

Intermediate Intermediate excavation shall be excavation in material that requires prior breaking using mechanical equipment, such as pavement breakers with clay spades, before being removed from the trench.	Very dense		16-50	-15
Rock / Hard Rock and Hard shall mean the same thing: - shall be excavation in material other than described above which by nature of the material requires blasting	-	-	>50	>15

PSD 3.2.3 MATERIAL SUITABLE FOR BACKFILL OR FILL AGAINST STRUCTURES

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

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

(a) The material shall not contain an excessive number of stones retained on a 50 mm sieve.

(b) The material shall not contain large clay lumps that do not break up under the action of the compaction equipment.

(c) The liquid limit of the material shall not exceed 40, neither shall the Pi exceed 18."

PSD 3.3 SELECTION

ADD THE FOLLOWING SUBCLAUSE:

PSD 3.3.3 SELECTION IN BORROW PITS AND EXCAVATIONS

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

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

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

PSD 5 CONSTRUCTION

PSD 5.1 PRECAUTIONS

PSD 5.1.1 SAFETY

PSD 5.1.1.1 BARRICADING AND LIGHTING

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

REPLACE SUB-PARAGRAPH (a) AND (b) WITH THE FOLLOWING AND ADD SUBPARAGRAPH c):

a) adequately protected by a barrier or fence comprising fluorescent orange plastic netting of height at least 1 000mm and as close to the excavation as practicable; and

b) provided with notice boards marked "CLOSED – GESLUIT" at each end of closed or partially closed roads; and

c) provided with flashing orange lights, placed at 15m intervals along the barricading at night.

ADD THE FOLLOWING TO THIS SUBCLAUSE:

Should The Contractor fail to provide adequate lighting, signing and barricading, access to properties, or leave the site in a dangerous condition, the Employer shall be entitled to suspend all work under The Contractor until in the Employer's opinion the Contractor 's obligation in these respects have been fulfilled and/or arrange for any

emergency work to be carried out by some other agency and to deduct the cost of this work from any monies due to the Contractor .

PSD 5.1.1.2 SAFEGUARDING OF EXCAVATIONS

REPLACE "Machinery and Occupational Safety Act" *IN SUB-PARAGRAPH* (a) *WITH* "Occupational Health and Safety Act, 1993 (Act 85 of 1993)."

ADD THE FOLLOWING TO SUB PARAGRAPH (d):

Loose ground, materials, tools and appliances shall be kept clear of the edge of the

excavations and a pathway at least 0,30 m shall be left clear along the edge of the excavation.

PSD 5.1.1.3 EXPLOSIVES

REPLACE THE CONTENTS OF THIS SUBCLAUSE AS FOLLOWS:

Where blasting is resorted to, it shall be carried out strictly according to Explosives Act and Regulations 1956 (Act No. 26 of 1956, as amended). However, in no case will blasting be allowed if a reasonable possibility exists of injury to any foundation, wall, pipe, cable or any structure, complete or partly complete. Where the Employer considers blasting to be dangerous, the same shall not be permitted and his decision shall be final and binding. Wherever blasting is permitted and resorted to in the vicinity or within the limits of existing townships, roads, etc., it shall only be executed under the cover of enough earth backfill, heavy wire mesh screens or rubber matting of adequate weight and area to prevent the blasted material from being ejected from the trench. If any damage should occur, The Contractor shall carry out remedial work arising from such damage and will be held to have allowed therefore in his price.

The Contractor shall undertake such blasting so that the Peak Particle Velocity (PPV) as measured at the closest point to the existing outfall sewer and or building structure shall not exceed 25mm/s. Each blast shall be monitored, and the findings recorded by an appropriately qualified explosives expert using a suitably calibrated apparatus. The Contractor shall also timeously inform the relevant inspectorate and obtain the required blasting permit from the South African Police Services, Division of Explosives before proceeding with any blasting on site. If in the opinion of the Employer, The Contractor makes careless use of explosives, he may forbid The Contractor the use of explosives.

It is a condition that should blasting result in the disturbing of material outside the trench, the Employer will require The Contractor to remove the disturbed material and backfill it to a compaction standard of the natural in-situ material. All this work for correcting areas of disturbed material will be done at the Contractor 's cost.

The schedule rate for hard rock excavation shall cover all costs incurred in connection with supply, transportation, storage and handling of explosives, the related blasting costs and any remedial work should this be required.

PSD 5.1.1.4 HARD ROCK EXCAVATION WITHOUT USING EXPLOSIVES

ADD THE FOLLOWING TO THIS CLAUSE:

It is a condition that should blasting result in the disturbing of structures outside the trench; the Employer will require The Contractor to remove the rock material by means of pneumatic or hydraulic breakers, e.g., jackhammers or woodpeckers.

The schedule rate for hard rock excavation without using explosives shall cover all costs incurred in connection with supply of specialist equipment, the transportation to and from the site as well as the removal and disposal of the hard material should this be required.

PSD 5.1.2 EXISTING SERVICES

PSD 5.1.2.2 DETECTION, LOCATION AND EXPOSURE

REPLACE THE CONTENTS OF SUBCLAUSE 5.1.2.2 WITH THE FOLLOWING:

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

Unless otherwise instructed or agreed by the Employer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

(a) In roadways: 93% Mod AASHTO density; and

(b) In all other areas: 90% Mod AASHTO density.

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

Payment in respect of exposing the services by means of hand excavation as described above, will be made in accordance with subclause PSA 8.8.4

Payment in respect of reinstating layer works in roadways will be made in accordance with subclause 8.3.6.1 of SANS 1200 DB."

PSD 5.1.2.3 PROTECTION OF CABLES

REPLACE SUBCLAUSE 5.1.2.3 WITH THE FOLLOWING:

PSD 5.1.2.3 PROTECTION DURING CONSTRUCTION

Further to the requirements of subclause 5.4.2 of SANS 1200 A (as amended), major excavating equipment and other plant shall not be operated dangerously close to known services. Where necessary, excavation near known services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a known service be discovered or encountered during the course of the Contract, The Contractor shall, in addition to complying with the requirements of subclause 5.4.2 of SANS 1200 A (as amended), immediately notify the Employer thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimize the occurrence of any further damage occurring."

PSD 5.1.2.4 NEGLIGENCE

DELETE SUB-CLAUSE 5.1.2.4

PSD 5.1.3 STORMWATER AND GROUNDWATER

ADD THE FOLLOWING TO THE SUB-CLAUSE:

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

PSD 5.1.4 NUISANCE

PSD 5.1.4.3 EXCAVATED MATERIAL NOT TO ENDANGER OR INTERFERE

AMEND THE CLAUSE AS FOLLOWS:

"A safe, clear path shall be kept open at all times for pedestrians. Equipment, materials and waste shall be stored, stockpiled or removed in such a manner that pedestrians are not endangered and that the nuisance level is kept to a minimum. If construction activities occupy the whole footway and verge area so that pedestrians are forced to walk in the traffic lane, adequate protection from traffic shall be provided.

Where instructed by the Employer or where the Works impose a danger to traffic or pedestrians, The Contractor shall at his own cost remove off Site excavated material to temporary stockpiles (approved by the Employer) and the return to Site, excavated material for use as backfill or bedding."

ADD THE FOLLOWING NEW SUBCLAUSE:

PSD 5.1.4.4 OPEN TRENCHES

Unless otherwise permitted and where relevant, not more than the 100 m of trench in one place shall be opened ahead of the completed and backfilled pipeline."

PSD 5.1.5 REINSTATEMENT AND MAINTENANCE OF ROADS *ADD*

THE FOLLOWING TO THE SUB-CLAUSE:

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

PSD 5.1.6 ROAD TRAFFIC CONTROL

DELETE THE SECOND SENTENCE OF SUBCLAUSE 5.1.6

PSD 5.2 METHODS AND PROCEDURES

PSD 5.2.2 EXCAVATION

PSD 5.2.2.1 EXCAVATION FOR GENERAL EARTHWORKS AND FOR STRUCTURES

ADD THE FOLLOWING TO PARAGRAPH (b):

"When the nature of the material precludes the above procedure, additional excavations shall be carried out to provide working space for the erection of formwork. The rate tendered for item 8.3.5 will be deemed to include the cost of a working width of 600 mm, but The Contractor may excavate a greater working width at no additional cost to the Employer."

REPLACE THE CONTENT OF PARAGRAPH (e) WITH THE FOLLOWING:

"Where excavations have been carried below the authorized levels, The Contractor shall backfill such excavations to the correct level with approved gravel compacted to 90% of modified AASHTO density or to the density of the surrounding material.

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

Where the sides of excavations against which concrete is to be cast have been overexcavated or have collapsed partially, The Contractor shall retrim the excavations if necessary and, unless other remedial measures are agreed to by the Employer, shall cast the concrete for the structure, including the additional concrete that may be required

because of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor 's account."

PSD 5.2.2.3 DISPOSAL

REPLACE THE SECOND SENTENCE WITH THE FOLLOWING:

"The Contractor shall provide all necessary spoil sites for the spoiling of all surplus and unsuitable materials and shall make the necessary arrangements with the owner of the site where the material is disposed of and pay all charges and levies as may be applicable for the use of such spoil sites.

Every spoil site provided by The Contractor shall be approved by the local authority in whose area it is located, and the spoiling shall comply with the applicable statutory and municipal regulations as well as the requirements of the owner of the spoil site.

Payment to The Contractor in respect of locating and making arrangements for suitable spoil sites and spoiling material at such sites will be made in accordance with the provisions of subclause PSD 8.3.14."

ADD THE FOLLOWING SUBCLAUSE IN SUBCLAUSE 5.2.2:

PSD 5.2.2.4 SELECTION AND STOCKPILING

Approval or designation of the material in a borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the particular purpose to which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The

Contractor shall select suitable material from that borrow pit or source, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organize and carry out his operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Employer's opinion, unsuitable for use in embankments or backfill as a result of contamination, shall be disposed of in a manner acceptable to the Employer and shall be replaced by The Contractor with materials acceptable to the Employer, all at the Contractor 's cost."

PSD 5.2.5 TRANSPORT FOR EARTHWORKS

REPLACE THE CONTENT OF SUBCLAUSE WITH THE FOLLOWING:

"The transport of all excavated materials, irrespective of the distance and source, shall be deemed to be free-haul, the cost of which is included in the Contractor 's tendered rates and prices for the excavation of the materials. No separate compensation shall apply for the transportation of excavated materials."

PSD 7 TESTING

PSD 7.2 TAKING AND TESTING OF SAMPLES

REPLACE THE CONTENT OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall arrange with the approved independent laboratory by The Contractor to carry out sufficient tests on a regular basis as agreed between him and the Employer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the specifications and shall submit the results of these tests to the Employer in a form approved by him.

The compaction requirements for fills shall be deemed complied with when at least 75% of the dry-density tests on any lot show values equal to or above the specified density and when no single value is more than five percentage points below the specified value."

PSD 8 MEASUREMENT AND PAYMENT

PSD 8.3 SCHEDULED ITEMS

PSD 8.3.1 SITE PREPARATION

REPLACE SUBCLAUSES 8.3.1.1 AND 8.3.1.2 WITH THE FOLLOWING:

"Where site preparation such as clearing, grubbing, the removal of large trees or the removal and stockpiling of topsoil is required, the provisions and scheduled items of SANS 1200 C shall apply."

PSDB 5 CONSTRUCTION

PSDB 5.1 PRECAUTIONS

PSDB 5.1.2 STORMWATER, SEEPAGE AND DEWATERING OF EXCAVATION

PSDB 5.1.2.3 SLOPING GROUND

ADD THE FOLLOWING SENTENCE AT THE END OF THE PARAGRAPH:

"All trench excavations on sloping embankments shall be backfilled in accordance with 5.6.2 over the full extent of the actual trench excavation and to the original embankment ground level."

PSDB 5.1.3

ACCOMMODATION OF TRAFFIC AND ACCESS TO PROPERTIES

REPLACE THE SEMICOLON AND THE WORD "and" AT THE END OF THE SUBCLAUSE 5.1.3 (a) WITH A FULL STOP AND REPLACE ITEM (b) WITH THE FOLLOWING:

"(b) Where necessary to achieve compliance by The Contractor with his obligations to provide and maintain pedestrian and vehicular access to properties affected by the works, The Contractor shall construct and maintain to the satisfaction of the Employer, such temporary access roads around, and/or steel or timber bridges over excavations in roads, pavements, entrances or accesses to properties.

The Contractor shall make available on site at all times a sufficient number of steel plates at least 2.0m x 2.0m x 8mm thick to be laid across open trenches to provide access to private properties. The cost of providing, placing and removing the steel plates shall be included in the rates for trench excavation.

On completion of the work, The Contractor shall dismantle and remove all such temporary constructions and reinstate these areas to their former condition.

Except only where the Employer has included in the Schedule of Quantities, particular payment items specifically therefore, The Contractor will not be paid directly for the construction and maintenance of temporary access roads and/or the provision and maintenance of bridges as aforementioned, and the costs thereof shall be deemed included in the Contractor 's tendered rates for excavation."

ADD THE FOLLOWING NEW SUBCLAUSE TO SUBCLAUSE 5.1:

PSDB 5.1.5 REMOVAL OF EXISTING PIPELINES

Where existing pipes have to be removed, they shall be carefully opened up by machine excavation to 300 mm above the pipes after which the whole pipe shall be fully exposed by means of hand excavation. The excavation width shall comply with subclause 8.2.3.

The pipes shall be removed from the trench in a manner approved by the Employer and brought to the surface for inspection by the Employer.

Pipes that are declared suitable for reuse and pipes declared unfit for reuse shall be dealt with in an applicable manner described in the specifications, or on the Drawings or on the Employer's instructions, as relevant."

PSDB 5.2 MINIMUM BASE WIDTHS

ADD THE FOLLOWING SUB PARAGRAPH TO:

d) Should the excavated trench width exceed the specified side allowance on each side of the pipe of 300mm by a value greater than 300mm, remedial

e) measures shall be as directed and shall be provided at the Contractor ’s cost unless it can be shown that such excess width is due to factors beyond the Contractor ’s control.

Trench widths should be as near vertical as possible in order to minimize the quantity of selected fill material to be provided.”

PSDB 5.4 EXCAVATION

ADD THE FOLLOWING SUB CLAUSES:

PSDB 5.4.1 PRINCIPLES

“a) The cost of trimming excavations by hand or machine shall not be paid for separately but shall be included in the rates tendered for excavation.

b) All excavated material shall be kept within defined limits and shall, wherever possible, be deposited alongside the trench. The material shall be deposited so as to leave a clear strip of at least one metre between the edge of the trench and the excavated material and shall not cause undue inconvenience to traffic and property owners. The material shall be placed and kept well clear of all manhole covers, culvert in- and outlets, fire hydrants, benchmarks, stand pegs, fences, etc.

c) To prevent vertical trench walls from collapsing, excavated material shall, wherever possible, not be stacked on the side of any underlying strata sloping down towards the trench and in this regard, attention is specifically drawn to the shales sloping south to north in the Pretoria area.

d) Excavations more than 1,5 m deep shall be adequately shored or braced to support the overhanging material and other loads which may occur. If the Contractor is of the opinion that shoring or bracing for an excavation of depth of more than 1,5 m is not necessary, he shall notify the Employer accordingly in writing, including a report from a professional Employer or a professional technologist competent in excavations. The report shall include the relevant laboratory tests.

e) The Contractor shall provide all the open and close timbering, strutting and shoring required for the safety of the excavations and structures adjacent to the trenches and shall be solely and wholly responsible for ensuring the adequacy of these measures for this purpose.

Without in any way affecting or detracting from the Contractor 's responsibility, the Employer shall have the right to instruct The Contractor to provide additional or improved timbering, shoring or strutting where he considers this to be necessary. The Contractor shall have no claim for additional payment on this account.

The shoring method adopted shall be compatible with the soil type and the excavating, backfilling and pipe-laying methods adopted and shall not place any undue restrictions on the laying of the pipes.

Timbering and shoring shall be left in position until the Employer has authorized their removal.

f) Shoring and bracing may not be necessary where The Contractor elects to slope the sides of the excavation to at least the maximum angle of repose measured relative to the horizontal plane, as determined by laboratory tests. Sloping of the sides could be combined with steps. The Contractor will submit the proposed excavation profile to the Employer for approval.

g) The cost for shoring, bracing and sloping of the sides will be included in the rates tendered for excavation. The cost for the services of a professional engineer or a professional technologist, including the relevant laboratory costs, shall be included in the tendered rates.

h) The Safety officer, or another competent person appointed by The Contractor in writing, shall inspect every excavation, including bracing and shoring:

(i) daily, prior to each shift;

(ii) after every blasting operation;

(iii) after an unexpected fall of ground;

(iv)after substantial damage to supports; and

(v) after rain, in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, the Employer, Employer's agent, The

Contractor or employee upon request;

i) Each excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, shall be

(i) adequately protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable; and

(ii) provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor."

PSDB 5.4.2 HAND EXCAVATABILITY

PSDB 5.4.3 EXCAVATION OF ASPHALT SURFACES

The existing asphalt road surfacing shall be saw-cut prior to excavation commencing for the full width of the trench as specified on the construction drawings so as to ensure a neat finish to the reinstated surfacing.

PSDB 5.6 BACKFILLING

PSDB 5.6.3 DISPOSAL OF SOFT EXCAVATION MATERIAL

DELETE THE EXISTING CLAUSE AND REPLACE WITH:

"The Contractor shall locate and negotiate for tipping sites for the disposal of surplus material and bear all costs in connection therewith. Arrangements for the consent of the owner of a property to deposit spoil and or temporary spoil thereon shall be confirmed in writing. Such arrangements shall be approved before being implemented. All spoil sites shall be neatly finished off and compacted to 90% of MOD.AASHTO density."

PSDB 5.6.6 COMPLETION OF BACKFILLING *ADD*

THE FOLLOWING:

Backfilling should not lag more than 50m behind the laying operation.

PSDB 5.7 COMPACTION

ADD THE FOLLOWING:

"Where pipelines cross existing gravel roads, backfilling shall be carried out as specified in Subclause 5.7.2 and payment therefore will be made under sub item 8.3.3.3."

PSDB 5.9 **REINSTATEMENT OF SURFACES**

ADD THE FOLLOWING TO THIS SUB CLAUSE:

PSDB 5.9.2 PRIVATE PROPERTY AND COMMONAGE

The ground and paved surface of servitudes, parks, driveways, roadways and sidewalks shall be reinstated to at least the standard and conditions as existed previously.

Grass sods shall be cut out from the grassed areas to be excavated and shall be set aside, preserved and kept damp until used for reinstatement. All other material to be used for reinstatement shall be suitably stored for such purpose.

The rate for reinstatement of block paved surfacing shall include all costs for the supplying and laying of the surfacing. The rate shall also cover for taking brick paving out carefully, stockpiling and replacement with new if bricks are broken or damaged. The rate must furthermore provide for all plant, labour and material costs associated with the work.

The rate for reinstatement of asphalt or concrete paved surfacing shall include all costs for the saw cutting, supplying and laying of the surfacing. The rate shall also cover for removal and spoiling of the material. The rate must furthermore provide for all plant, labour and material costs associated with the work.

The width of any trench through an area paved with bricks or precast concrete units shall be the minimum practicable width that, in the opinion of the Employer, can be removed without cutting bricks or precast units.

PSDB 5.9.4 BITUMEN ROADS: SUB-BASE AND BASE

DELETE THIS SUB CLAUSE AND REPLACE WITH THE FOLLOWING:

Johannesburg Roads Agency will reinstate all asphalt surfaces. Refer to PS 6.7.

ADD THE FOLLOWING NEW SUB CLAUSES:

PSDB 5.9.7 CONSTRUCTION OF LAYERS FOR FOOTWAYS

The reinstatement of the paving blocks shall be the responsibility of the Contractor. The reinstatement and backfilling of pavement layers shall be done in accordance with PS 6.7

ADD THE FOLLOWING NEW SUB CLAUSES:

PSDB 5.9.8

EXISTING KERBS AND CHANNELS

"Where excavations have to cross existing kerbs and channels, then:

a) In the case of a precast kerb and channel the kerb, segmented paving blocks and channel shall be carefully removed and stored so as to avoid any damage to or theft of the kerb and channel and replaced after the excavation has been backfilled. Any damage to or theft of the kerb and channel shall be made good by The Contractor at his expense.

b) In the case of cast insitu or extruded insitu kerb and channel the kerb and channel shall be cut with a diamond tipped saw and carefully removed so as to avoid any damage to the remaining kerbs and channels. After the excavation has been backfilled the portion of kerb and channel removed shall be replaced with a cast

c) insitu kerb and channel of the same profile as the existing kerb and channel."

ADD THE FOLLOWING NEW SUB-CLAUSE:

PSDB 5.11 LOCATION OF EXISTING SERVICES

Positions and details of known existing services as received from the various Departments are indicated on the Construction Drawings. Exact positions cannot be guaranteed by The Employers who will not be held responsible for any damages to any services. The Contractor shall excavate by hand to locate any such services and ensure that care is taken not to damage these services.

ADD THE FOLLOWING NEW SUB-CLAUSE:

PSDB 5.12 DEALING AND PROTECTING EXISTING SERVICES

All existing services, underground as well as above ground level, shall be protected by The Contractor in an appropriate manner, for the duration of the construction or as deemed necessary by the Employer, such that no damage to or interruption of the services shall occur.

ADD THE FOLLOWING NEW SUB-CLAUSE:

PSDB 5.13

GAS MAIN, ELECTRICITY AND TELECOMMUNICATION POLES

Gas mains, electricity and telecommunication poles along the pipe route are to be stabilized and protected prior to excavation and for the duration of construction.

ADD THE FOLLOWING NEW CLAUSE:

PSDB 5.14 **TREES IN CONSTRUCTION PATH**

Whenever possible any trees that lie within the construction path, shall not be removed and care shall be exercised to avoid damaging them. If the Contractor considers the removal of any tree unavoidable he/she shall obtain in writing the approval of the Employer and the Environmental Consultant prior to removal of any trees. Rates to cover removal and replacement where practical are provided in the schedule of

quantities. A penalty of R1, 000.00 will be applied for any unauthorized or unnecessary damage to any tree which in the opinion of the Employer could have been avoided.

ADD THE FOLLOWING NEW SUBCLAUSE 5:

PSDB 7 **TESTING**

ADD THE FOLLOWING NEW SUBCLAUSE:

PSDB 7.2 **INSPECTION AT INTERMEDIATE STAGES OF CONSTRUCTION**

The Contractor shall call the Employer, giving him reasonable notice, to inspect the works at the following intermediate stages of construction:

a)After completion of the trench excavation and preparation of the trench bottom and before any pipe is laid.

b)After the selected backfill, material has been placed around the pipe and before the remainder of the trench is backfilled.

c)Before placing of premix on roads or any final surfacing on constructed footways. Work shall not progress through the specified stages without the approval of the Employer or his representative on site.

Failure to comply with the provision of this clause shall result in the suspension of the backfilling work until the testing has been approved by the Employer."

PSDB 8 **MEASUREMENT AND PAYMENT**

PSDB 8.1

BASIC PRINCIPLES

ADD THE FOLLOWING PRARGRAPH:

"The basic principle of measurement and payment for earthworks for a pipe trench is that the rates tendered for excavation shall also cover the cost of trimming, handling and shoring or bracing as specified in clause PSDB 5.4".

SCHEDULED ITEMS

PSDB 8.3

PSDB 8.3.2 EXCAVATION

a) Excavate in all materials, for trenches, backfill compact and dispose of surplus material

ADD THE FOLLOWING SUB-ITEM:

The rate shall also cover the cost of excavating for trenches using labour intensive construction methods. The rate shall exclude the cost of removal of grass sods and compaction but shall include for the disposal of surplus/unsuitable material. The rate shall, in addition, cover the costs for compliance with the requirements of PSDB 5.4.1.

b) Extra over item (a) above for:

ADD THE FOLLOWING AT THE END OF THE EXISTING SUB-ITEM 2:

"No payments will be made under sub items (1) and (2) in respect of any materials measured and paid for under sub item 3 below."

AND ADD THE FOLLOWING NEW SUBITEMS IN 8.3.2(b):

"(3) Hand excavation and backfill where ordered by the Employer ……Unit: m^3

The unit of measurement shall be the cubic metre of material, measured in place according to the authorized dimensions, which was excavated by the hand on the specific prior written instructions of the Employer; provided always that the Employer's said instruction shall have stated that measurement and payment for such hand excavation will be in accordance with this item.

The tendered rate shall include full compensation for the additional cost, effort and time resulting from excavating in the respective materials using hand methods only.

The Employer shall not be obliged to authorize payment under this item in respect of any hand excavation carried out (whether ordered in writing or otherwise), which hand excavation was in any case necessary to achieve compliance by The Contractor with his obligations under the Contract to

(i) utilize construction appropriate to the nature of the specific parts of the works; and/or

(ii) protect existing structures and/or services; and/or

(iii) comply with all prevailing legislation and regulations.

(4) Cutting of premix and concrete surfaces…..…….Unit: m^2

The cutting of premix and concrete surfaces shall be measured per square metre of cut as scheduled. Cutting of premix and concrete surfaces shall be done with a diamond tipped saw or by some other approved method. The depth of the cut shall be such that the adjoining premix and concrete surfaces are not disturbed when excavation takes place. The cutting of surfaces shall be done 100mm on either side of the trench.

(5) Backfill stabilized with 5% cement were directed by the Employer…… Unit: m_3

The unit of measurement shall be the cubic metre of backfill material, measured in place after compaction according to the authorized dimensions, which was stabilized on the Employer's instructions in accordance with subclause PSDB 3.5(c).

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing, backfilling and compacting the stabilized material to 90% of modified AASHTO density.

(6) Soil-crate backfill where directed by the Employer …….. Unit: m^3

The unit of measurement shall be the cubic metre of soil-crate placed on the Employer's instructions in accordance with subclause PSDB 3.5(d), measured in place according to the authorized dimensions.

The tendered rate shall include full compensation for supplying the cement and for selecting, mixing and placing the soil crate as well as for the cost of shuttering if required."

PSDB 8.3.3 EXCAVATION ANCILLARIES

PSDB 8.3.3.3 COMPACTION IN ROAD RESERVES

REPLACE THE HEADING OF THIS SUBITEM WITH THE FOLLOWING:

"PSDB 8.3.3.3.3 Compaction in road crossings"

REPLACE THE SENTENCE, "The volume will be measured as specified in 8.2.2, 8.2.3 and 8.3.3.1", WITH THE FOLLOWING:

"To determine the volume in the case of gravel roads, the depth will be measured from the underside of the gravel wearing course to the top of the fill blanket, and in the case of bitumen roads, from the underside of the subbase to the top of the fill blanket.

The rest of the trench shall be backfilled as specified in clauses 5.9.3, 5.9.4 and 5.9.5, as applicable, and payment will be made under item 8.3.6.1."

PSDB 8.3.3.4 OVERHAUL

REPLACE THE CONTENTS OF THIS ITEM WITH THE FOLLOWING

"Measurement and payment shall be in accordance with subclause PSD 5.2.5."

PSDB 8.3.4 PARTICULAR ITEMS

PSDB 8.3.4(A) SHORE TRENCH OPPOSITE STRUCTURE OR SERVICE

REPLACE THE HEADING OF THIS SUBITEM WITH THE FOLLOWING:

PSDB 8.3.4(A) SHORE TRENCH OPPOSITE STRUCTURE OR SERVICE FOR DEPTHS:"

ADD THE FOLLOWING AFTER THE LAST SENTENCE:

"Separate items will be measured for depths of trenches in increments of 1 m. The rate for each stated category shall cover the cost of shoring from ground level up to the full depth of the stated category. Payment for this item will only be made if written instructions were issued by the Employer over and above the Standard Specifications for safety of excavations as specified in SANS1200 DB, subclause 5.1."

PSDB 8.3.4(b) Temporary works: Control water inflow from ……. to ……. REPLACE THIS SUBITEM WITH THE FOLLOWING:

PSDB 8.3.4(b) Accommodation of existing flows for temporary or permanent connections or construction of new structures or pipe trenches:

1) (Description of item stated) ……
Unit: Sum

2) Etc. for other structures

The tendered sums shall include full compensation for any inconvenience suffered, for normal and exceptional risks, for unforeseen eventualities and for maintaining the accommodated flow as long as necessary and shall include for the design and construction of all necessary temporary measures such as additional clearing, grubbing, earthworks, culverts, structures, pipework, pumping, cleaning up and any other associated work that may be required as specified in Clause PS1.5. Where a temporary structure for the accommodation

of an existing flow has been designed by the engineer and is to be constructed by the Contractor, payment for such structure shall, unless otherwise stated in

the scheduled item, be made under the applicable sub items in this payment item."

PSDB 8.3.5 EXISTING SERVICES THAT INTERSECT OR ADJOIN A PIPE TRENCH

PSDB 8.3.5 A) SERVICES THAT INTERSECT A TRENCH
ADD TO THE FIRST SENTENCE OF THIS SUB CLAUSE AS FOLLOWS:

After "Except where water pipes are to be recovered" add "*and water leads for erf connections need to be renewed*"
ADD THD NEW SUBCLAUSE PSDB 8.3.5 c) TO CLAUSE 8.3.5 AS FOLLOWS:

PSDB 8.3.5 C) SERVICES THAT REQUIRE SPECIAL CARE

1) Description of service……Unit: No

2) Etc. for other items……Unit: No

The Unit of measurement shall be the number of each service described. Electricity, telecommunication poles and water mains along the pipe route are to be stabilized and protected prior to excavation and for the duration of construction. The rate shall cover the temporary stabilization and protection of electricity and telecommunication poles.

ADD THD NEW SUBCLAUSE PSDB 8.3.6.2 TO CLAUSE 8.3.6 AS FOLLOWS:

PSDB 8.3.6.2 REINSTATEMENT OF SURFACING FOR FOOTWAYS

a) Brick paving..... Unit: m²

b) Concrete paving ..... Unit: m²

c) Concrete slabs ..... Unit: m²

The Unit of measurement shall be square metre of a reinstated. The rate for reinstatement of footway surfacing shall include all costs for careful removal, replacement of damaged sections and laying of the surfacing using labour intensive construction methods. The rates shall include for the lifting, stockpiling and replacement of broken or damaged bricks, blocks or slabs and shall provide for all plant, labour and material costs associated with the work.

The width of any trench through an area paved with bricks or precast concrete units shall be the minimum practicable width which, in the opinion of the Employer, can be removed without cutting bricks or precast units.

ADD THE NEW SUBCLAUSE PSDB 8.3.6.3 TO CLAUSE 8.3.6 AS FOLLOWS:

PSDB 8.3.6.3 Reinstatement of kerbs and channels.....Unit: m²

The unit of measurement shall be square metre of area reinstated. The rate shall cover the cost of all labour, plant and material required and shall also include for the disposal of all unsuitable materials.

ADD THD NEW SUBCLAUSE PSDB 8.3.6.3 TO CLAUSE 8.3.6 AS FOLLOWS:

PSDB 8.3.6.4 Reinstatement of grassed surfaces.....Unit: m²

The unit of measurement shall be square metre of area reinstated. The rate shall cover the cost of careful removal of grass sods to a minimum depth to a minimum depth of 100mm, stockpiling, maintenance for later re-use and reinstatement thereof."

DELETE THIS SUBCLAUSE AND REPLACE WITH THE FOLLOWING:

PSDB 8.3.6.5 REINSTATEMENT OF FENCE

a) Description of fence.....Unit: m b)

Etc. for other items

d)The unit of measurement shall be the metre of fence reinstated complete. The rate shall cover the full compensation, labour, material and ancillary works for the reinstatement.

PSDK GABIONS AND PITCHING

PSDK 3 MATERIALS

PSDK 3.2 PITCHING

PSDK 3.2.1 STONE

REPLACE THE CONTENTS OF TABLE 2 WITH THE FOLLOWING:

"TABLE 2 SIZE AND MASS OF INDIVIDUAL STONES FOR PITCHING

1	2	3	4
Size/mass of pitching	Thickness of pitching Mm, min	Least dimension Mm, min	Mass kg, min
Extra heavy	600	300	180
Heavy	400	190	50
Medium	300	150	27
Light	200	110	11

PSDK 5 CONSTRUCTION

PSDK 5.3.3 GROUTED PITCHING

REPLACE THE WORDS "(Table 4)" IN THE SECOND LINE OF THE FIRST PARAGRAPH WITH "(Table 2)"

PSG CONCRETE STRUCTURAL

PSG 3 MATERIALS

PSG 3.2 CEMENT

PSG 3.2.3 STORAGE OF CEMENT

ADD THE FOLLOWING:

"Cement shall not be store for longer than 12 weeks without the Employers permission".

PSG 3.4 AGGREGATES

ADD THE FOLLOWING SUBCLUASE:

PSG 3.4.4 AGGREGATE OF DOLOMATIC ORIGIN

All aggregates for structural concrete, manholes, pipe encasement, pipe bedding cradles, mass filling, etc. shall be of dolomitic origin. The quantity of insoluble matter in respect of concrete made with aggregates of dolomitic origin, determined according to the method described in SANS 677, Appendix C, shall not be more than 15%.

PSG 4 PLANT

PSG 4.1 GENERAL

ADD THE FOLLOWING SUBCLAUSE

PSG 4.1.1 MINIMUM PLANT

The Contractor shall have the following minimum Plant available and in sound working order:

(a) Two concrete mixers, each of sufficient capacity to complete a section off the wall between horizontal construction joints within 4 hours and without interruption;

(b) Two concrete vibrators, at least one of which shall be powered by an internal combustion engine;

(c) One air compressor;

(d) Storage tanks at the water carts or trucks are adequate capacity to ensure that sufficient water will be available before commencement of every major concrete-placing operation.

If the Plant used for placing concrete for the structure of electrically or mechanically powered, the Contractor s shall also provide some other approved, non- electrically powered standby means for placing concrete at an adequate rate in the event of a power or mechanical failure of the main Plant.

When the Contractor elects to place a crane inside the walls of the structure during the construction period, shall communicate with the Employer in good time to ensure that the design and layout of the panels that form the roof slabs and floor allow for such positioning of the crane. When sections of the roof and floor have to be redesigned to accommodate the crane, the redesigned cost shall be borne by the Contractor.

PSG 4.5 FORMWORK

PSG 4.5.1 DESIGN

ADD THE FOLLOWING:

All form work with scaffolding required for any part the works shall be designed by the Contractor, and before commencing with the erection of any formwork or scaffolding, The Contractor shall submit the methods he proposes to use to the Employer for approval. The Employer has the authority to order alterations to the design or the sizes of any part of the formwork or scaffolding. The Contractor shall check the safety and suitability of all such alterations. The fact of the Employer has approved or altered any part of the formwork of scaffolding shall not be construed as relieving The Contractor

of his responsibility with regard to the strength and stability of the formwork or scaffolding.

PSG 4.5.3 TIES

ADD THE FOLLOWING:

“No plugs, bolts, ties or clamps of any description used to hold formwork will be allowed into the project or through the concrete unless expressly approved by the Employer.

Only approved tie-rods consisting of solid rods (that remain embedded in the concrete) and with removable ends shall be used to hold the formwork of the walls. The removable tie-rod ends shall facilitate removal without damage to the concrete, and no permanently embedded parts of such tie-rods shall have less than 50mm of cover to the finished concrete surface.

The cavities left in the concrete when the tie-rod end cones are removed shall soundly caulked with a cement mortar to which an approved shrinkage-reducing agent has been added and shall be neatly to finished to a smooth surface uniform with that of the surrounding concrete.

The cost of supplying special tie-rods as well as the filling of the cavities left by the tierod cones shall be included in the rates tendered for formwork under the appropriate pay items.

On no account shall formwork be secured to reinforcing bars”.

PSG 5 CONSTRUCTION

PSG 5.1 REINFORCEMENT

PSG 5.1.2 FIXING

ADD THE FOLLOWING:

"The Employer will inspect the reinforcing after it has been fixed in place, the formwork has been cleaned, cover blocks have been positioned, and before concreting commences.

Welding of reinforcing steel will not be permitted".

PSG 5.1.3 COVER

ADD THE FOLLOWING:

"The distance between pipes in the reinforcing steel shall nowhere be less than:

(a) 40 mm or

(b) 5 mm plus the maximum size of the coarse aggregate, whichever is the largest

PSG 5.2 FORMWORK

PSG 6 TOLERANCES

PSG 6.2 PERMISSIBLE DEVIATIONS

PSG 6.2.3 SPECIFIED PERMISSIBLE DEVIATIONS *ADD*

THE FOLLOWING:

"Degree of accuracy II is applicable

Every specified permissible deviation is binding in itself. The cumulative effect of permissible deviations will not be considered. The maximum permissible vertical deviation is subject to the other permissible deviations".

REPLACE SUBCLAUSE 6.2.3 (D)(5) WITH THE FOLLOWING:

	Permissible deviation		
	Degree of accuracy		
	III	II	I
	mm	mm	mm
"Vertically, per metre of height Subject to a maximum	5	3	2
	50	30	10

PSG 7 TESTS

PSG 7.1 FACILITIES & FREQUENCY OF SAMPLING

PSG 7.1.1. FACILITIES

ADD THE FOLLOWING:

"The Contractor shall provide sufficient storage capacity for the concrete cubes and shall arrange to have them tested by an approved laboratory.

The cost all testing, including the cost of sampling, storage and transporting samples should be included in the rates tendered for concrete work".

PSG 7.3

ACCEPTANCE CRITERIA FOR STRENGTH CONCRETE *ADD*

THE FOLLOWING:

"Test results obtained from the supplier of ready-mix concrete will not be accepted for evaluation in terms of subclause 7.3, but samples for testing shall be taken off such concrete at the point of placing ".

ADD THE FOLLOWING SUBCLAUSE:

PSG 7.3.6 TESTING FOR WATER TIGHTNESS

Water for testing shall be provided by The Contractor and shall be responsible for providing all necessary equipment that may be required for filling the structures.

The structure shall be filled with water at a uniform rate not exceeding 2.0 m in 24 hours until the top water level been reached. The water level will then be carefully noted and recorded by the Employer in relation to a fixed benchmark and shall be contained by the addition of further water for a sterilizing period to permit complete absorption of water by the concrete.

The sterilizing period may be 7 days for a maximum design crack width of 0.1mm or 21 days for 0.2mm or larger. After the sterilizing period, the level of the liquid surface shall be recorded at 24-hour intervals for a test period of 7 days. During the 7-day test period the total permissible drop in level, after allowing for evaporation shall not exceed 1/500 the one of the average water depths of the full tank, or 10 mm.

The evaporation shall be measured by the mean drop in level caused by the evaporation of the water in three flat containers floating in the water being recorded.

In the event of appreciable leakage being evident at any of the stages of the filling or testing or the event of the Employer considering the final degree of water tightness to be unsatisfactory, The Contractor when ordered by the Employer shall discontinue such filling or testing and shall, at his own expense, take approved steps immediately to rectify the leakage, until a satisfactory test is obtained, which shall prove to the Employer that a sufficient degree of water tightness has been obtained.
The cost of emptying a water-retaining structure which cannot be drained shall be borne by the Contractor. The water shall be discharged in a manner approved by the Employer and shall be such that the employer can utilize the water is he so desires.

The water shall not be used as a medium for additives to affect remedial work or to stop leaks.

The cost of retesting the structure for water tightness shall be borne by the Contractor".

PSG 8 MEASUREMENT AND PAYMENT

MEASUREMENT AND RATES

PSG 8.1

PSG 8.1.1 FORMWORK

DELEAT “or splays over 20 mm x 20 mm” FROM THE FIRST LINE OF PARAGRAPH 8.1.1.2

ADD THE FOLLOWING PARAGRAPH 8.1.1.2

“Splays up to and including 25 mm x 25 mm will not be measured separately and will be deemed to be included in the formwork costs”.

ADD THE FOLLOWING PARAGRAPHS

“8.1.1.7 For construction joints at kickers (joint F), all additional costs for formwork to edges up to 300 mm high will be deemed to be included in the rates tendered for vertical formwork to sides of walls and will not be measured separately in narrow width.

8.1.1.8.1 No formwork will be measured to edges of blinding layers under structures and the cost thereof (if needed), will be deemed to be included in the rates tendered for concrete in blinding layers.

8.1.1.8.2 Back-shuttering or formwork to top revealed surfaces of sloping - or conical formwork will only be measured to surfaces over 40° and 85° to the horizontal.

8.1.1.8.3 Formwork to horizontal surfaces in pump stations, valve chambers, manholes or sumps can either be removed through the manhole cover opening or The Contractor may use permanent formwork at his own cost as no claims in this regard will be considered”.

PSG 8.1.2 REINFORCEMENT

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The unit of measurement for steel bars shall be the ton of reinforcement in place, in accordance with the Drawings or as authorized by the Employer.

The unit of measurement for welded steel fabric shall be the kilogram of fabric reinforcement in place, and the quantity shall be calculated from the net area covered by mesh, excluding overlaps.

Clips, ties, separators, stools and other steel used for positioning reinforcement will not be measured, unless these are shown on the bending schedules.

The tendered rate shall include full compensation for the supply, delivery, cutting, bending, welding, placing and fixing of the steel reinforcement, including all tying wire, stools, supports and waste".

PSG 8.1.3 CONCRETE

Delete "or the plank size of the excavation where additional excavation is provided to facilitate erection of forms" from the second line of paragraph 8.1.3.1(c). **PSL 3.9 CORROSION PROTECTION**

PSL 3.9.2 STEEL PIPE

ADD THE FOLLOWING TO THE EXISTING CLAUSE:

"All coating and linings shall be completed strictly to the publication "Corrosion Protection for Civil, Mechanical and Electrical Engineer 2000 Edition.

Pipes and fitting shall be externally coated with fusion bonded medium density polyethylene (sintakote) or polyclad 777 and internally with liquid epoxy lining or similar approved.

The thickness of the lining material shall not be less than 250 micron and test certificates of the lining thickness must be furnished to the Employer for his approval."

PSL 3.9.2.3 REPAIRS TO EPOXY COATINGS

ADD THE FOLLOWING TO THE EXISTING CLAUSE:

PSL 3.9.2.3.1 GENERAL

(a) Where the damage is extensive the remedial procedures shall be agreed in writing with the Employer.

(b) All repairs shall comply with the requirements of the repair-product manufacturer's data sheet. The Employer may at his discretion request that repaired coating areas undergo adhesion tests.

(c) The Contractor shall repair any damage occurring during transport, on site during handling, assembly, storage, and erection.

(d) The repaired area shall be tested in accordance with Sub-Clauses 8.4 and 8.12 of SANS 1217 for compliance with the relevant requirements for thickness and electrical insulation defects respectively.

(e) Any item showing electrical insulation defects exceeding an average of five per square metre (a cluster of pinholes within a radius of 25 mm being regarded as a single defective area), or flaking or other signs of loss of adhesion, shall not be repaired. The item shall be blast cleaned and re-coated in accordance with the relevant requirements of the Clause PSL 3.9.2.3.3.

PSL 3.9.2.3.2 REPAIR METHODS FOR MINOR DEFECTS

The repair of areas showing electrical insulation defects or low film thickness shall, if approved by the Employer, be carried out as follows:

(a) Degrease in accordance with Clause PSL 3.9.2.3.4.

(b) Thoroughly abrade the damaged area, including an adjacent surrounding area of at least 25 mm wide, with a medium grade 220 abrasive paper;

(c) Vacuum-clean the surface to remove dust and debris in accordance with SANS 5769.

(d) Wipe the abraded paint surface with methyl ethyl ketone and allow to dry, and

(e) Apply as many coats of the following repair material as necessary to achieve the specified thickness and finish.

(i) Solvent free epoxy; or

(ii) Fusion-bonded epoxy powder repair kit.

NOTE: Apply a final topcoat over the repaired area to achieve a pleasing, uniform finish of the item.

PSL 3.9.2.3.3 REPAIR METHODS FOR MAJOR DEFECTS

The total un-coated areas for renovation by the applicator shall not exceed 0.5% of the total surface area of a component. Each un-coated area for renovation shall not exceed 2 500 mm². If damaged areas are larger, the items containing such areas shall be recoated.

The repair of areas showing damage down to the steel surface shall, if approved by the Employer, be carried out as follows:

(a) Degrease in accordance with Clause PSL 3.9.2.3.4

(b) Blast-clean all damaged areas to Sa 3 (ISO 8501-1).

(c) Feather the surrounding paint for a distance of 25 mm beyond the damaged areas with a medium grade 220 abrasive paper.

(d) Vacuum-clean the surface to remove dust and debris in accordance with SANS 5769.

(e) Wipe only the abraded paint surface with methyl ethyl ketone and allow drying.

(f) Apply as many coats of the following repair material as necessary to achieve the specified thickness and finish.

(i) Solvent free epoxy or

(ii) Fusion-bonded epoxy powder repair kit.

NOTE: Apply a final topcoat over the repaired area to achieve a pleasing, uniform finish of the item.

PSL 3.9.2.3.4 DEGREASING

(a) All surfaces to be coated shall be tested for oil and grease contamination by the water break free test.

(b) Oil and grease contamination shall be removed by:

- Steam-cleaning;
- An emulsifiable or aqueous detergent applied in accordance with SANS 1344; and
- An alkaline cleaning solution.

(b) Allow to react, and then rinse off with clean, potable water to remove all residues prior to surface preparation, all in accordance with Clauses 3.3 and 3.4 of SANS 10064.

(c) The surfaces shall be tested after degreasing and show no oil, grease and chemical contamination after degreasing.

(d) Care shall be taken to avoid entrapment of cleaning agents in recesses or other retention areas.

ADD THE FOLLOWING NEW SUBCLAUSE:

PSL 3.9.2.4 REPAIR OF DAMAGED SINTAKOTE

PSL 3.9.2.4.1 GENERAL

Damaged Sintakote shall be repaired in accordance with the procedures detailed in the Tyco Handling and Installation Manual for steel pipeline systems for the repair of Sintakote or in accordance with clause 3.2 or clause3.3

PSL 3.9.2.4.2 REPAIR OF SMALL PINHOLE TYPE DEFECTS

PSL 3.9.2.4.2.1 SURFACE PREPARATION

- Clean and dry the area to be repaired including the removal of dirt, dust and other contaminants. Slightly roughen the area around the repair for a minimum distance of 50 millimeters using a coarse file or abrasive paper.
- Wipe the surface with a clean dry rag.

PSL 3.9.2.4.2.2 PRIMING

- Stir the primer to ensure complete mixing prior to application. Apply a thin even coat of Densopol Primer D around the area of repair using a paint brush or roller
- Allow the primer to tack dry (approximately 10 to 20 minutes)

PSL 3.9.2.4.2.3 TAPE WRAPPING

- Apply Deponsole 60 tape to the repair area ensuring a minimum of 50 mm overlap onto sound coating around the defect area.
- Apply Denso MP/HD P.V.C self-adhesive over wrap tape around the full pipe circumference to completely cover the repaired patch.

PSL 3.9.2.4.3 REPAIR OF LARGE AREA OF DAMAGE WHERE STEEL IS EXPOSED

PSL 3.9.2.4.3.1 SURFACE PREPARATION

Cut out the area of Sinkakote and clean the steel surface in accordance with AS1627.2. Clean and dry the area to be repaired. Slightly roughen the area around the repaired using a course file or abrasive paper. Wipe the surface clean with a dry clean rag. PSL 3.9.2.4.3.2 PRIMING

- Stir the primer to ensure complete mixing prior to application. Apply a thin, even coat of Densopol Primer D onto the steel surface and around the periphery of the Sintakote.
- Allow the primer to track dry (Approximately 10 to 20 minutes)

PSL 3.9.2.4.3.3 FILLING/PRIMING

- Cut out a piece of Bitumen Mastic Strip to fit into the bare steel area prior to applying the primer.
- Insert the cut-out piece of Bitumen Mastic Strip into the repair area.
- Re-apply a thin even coat of Densopol Primer D over the patch and adjacent area of Sintakote.
- Allow the primer to track dry (Approximately 10 to 20 minutes)

PSL 3.9.2.4.3.4 Tape Wrapping

- Apply Densopol 60 tape to the repair area ensuring a 50mm overlap over the fitted patch.
- Apply Denso MP/HD P.V.C self-adhesive over wrap tape around the full pipe circumference to completely cover the repaired patch.

PSL 3.9.2.4.4 SURFACE PREPARATION

All joints shall be fully welded and sealed, and all sharp edges and corners ground off to a radius of not less than 1.5 mm. All weld spatter and irregularities shall be removed. Any unsound or damaged edges of sintakote shall be cut back into the sound coating and the edges chamfered.

The surface shall be cleaned by means of power tools to achieve a minimum surface preparation in accordance with AS1627.2 TO CLASS St. 2. All dust, dirt, moisture and

grease shall be removed. Slightly roughen the sintakote 100 millimeters both sides of the joint, using a coarse file or abrasive paper. Wipe the surface clean with a dry rag.

PSL 3.9.2.4.5 PRIMING

- Stir the primer to ensure complete mixing prior to application, apply a thin even coat of Densopol Primer D to the steel and roughened sintakote surfaces using a paintbrush or roller.
- Allow the primer to touch dry (approximately 10 to 20 minutes)

PSL 3.9.2.4.6 MASTIC FILLING

To improve the contours for wrapping the tape, fillet welds, sharp edges of sintakote, test plugs or welding lid holes shall be filled and profiled with Bitumen Mastic Strip. The mastic filling shall be molded such that the Densopol 60 tape can be applied with no sharp edges protruding or air entrapment.

PSL 3.9.2.4.7 TAPE WRAPPING

Commencing at least 100 millliliters back onto the primed sintakote one complete turn of 150 milliliter wide Densopol 60 tapes shall be applied. Release film shall be removed before application. While holding the tape under tension, the pipe shall be spirally wrapped using a 55 percent overlap and finished 100 mm onto the primed sintakote with one complete circumferential wrap around the pipe. The tape shall be cut off in the downward direction of wrapping. New roles of tape shall have the ends overlapped at least 75 mm.

During wrapping the tape shall be smoothed out by hand to exclude any air bubbles or wrinkles and to seal overlaps.

Care shall be taken to prevent any folds or misplacement of the tape, especially under the pipe, and to prevent the tape becoming contaminated during wrapping.

The butt-welds in segmental (lobster bends) are to have the tape applied partial layer by partial layer with a 55 percent overlap until a full spiral wrap can be made (refer sketch in appendix A) continue wrapping onto the primed sintakote for at least 100mm with one complete circumferential wrap around the pipe.

Straight steel pipes shall also be wrapped with Densopol 60 with a 55 percent overlap in accordance with the above clauses.

PSL 3.9.2.4.8 STEEL FITTINGS AND FLANGES

PSL 3.9.2.4.8.1 GENERAL

Procedures for the protection of steel fittings applies to both main pipeline fittings and branch pipe work. Fittings manufactured and coated by Tyco shall be factory coated with Sintakote. Difficult fittings such as valves may be protected using a more conformable petrolatum system in accordance with TS29 only with the approval of a SA Water representative.

PSL 3.9.2.4.8.2 SURFACE PREPARATION

Still surfaces shall be prepared in accordance with clause 4.1.

PSL 3.9.2.4.8.3 TAPE WRAPPING

Prepare and wrap all straight sections leading up to the fitting and flange in accordance with section 4.

PSL 3.9.2.4.8.4 PRIMING

- Stir the primer to ensure complete mixing prior to application. Apply a thin even coat of Densopol Primer D to the prepared steel surfaces and a minimum of 50mm onto the Densopol 60 wrapped areas using a paint brush.
- Allow the primer to touch dry (approximately 10 to 20 minutes).

PSL3.9.2.4.8.5 MASTIC WRAPPING

Unavoidable sharp edges such as bolts, nuts and collars shall have mastic strip molded over the positions or edges. Strip with a 55 percent overlap onto itself and minimum 50mm overlap onto the Densopol 60 or Sintakote coated pipe work. Press the Bitumen Mastic Strip firmly into place ensuring no air voids are beneath the Bitumen Mastic Strip.

Note: The Bitumen Mastic Strip provides corrosion protection to the steel work and is similar in composition to Densopol 60, but it does not have a woven carrier.

PSL3.9.2.8.6 OVER WRAPPING

150 or 100mm wide Denso MP/HD tape (self-adhesive PVC) shall be spirally wrapped over the Bitumen Mastic Strip with a 55percent overlap. While wrapping, the Denso MP/HD tape shall be pulled firmly and the lapse properly sealed.

PSL3.9.2.8.7 TESTING

All repairs and wrapping shall be tested using a high voltage "spark" tester in accordance with AS3894.1 at an operating voltage of 15 KV.

PSL3.9.3 PROTECTION AGAINST ELECTROLYTIC CORROSION
OMIT THE EXISTING CLAUSE AND INSERT THE FOLLOWING:

"All joints and fittings shall be fully wrapped with approved protective tapes. Protective tape shall comply with either Specification A or Specification B as ordered by the Employer.

SPECIFICATION A

This tape shall be made up of pre-bonded components to form a composite single wrap tape. The adhesive inner protective tape must provide complete protection to steel piping against electrolytic corrosion. It shall be impermeable to water, chemically inert and physically stable and must provide a perfect seal at the overlap on a spiral-winding pattern.

The adhesive outer protective tapes shall be tough and impact resistant, providing suitable protection of the inner protective tape against mechanical damage. It shall be stable and not crack or deteriorate when buried. The tapes shall be chemically resistant to all common acids and alkalis normally encountered in the soils at the construction site.

	Inner Tape	Outer Wrap
Thickness (mm)	0,3	0,3
Tensile strength (kg/cm width)	3,3	5,0
Elongation at break (%)	200%	50%
Adhesion to primed steel (gm/cm width)	220	220

The tapes shall be suitable for both machine and hand application.

The Combination electrical characteristics of the inner and outer wrap together must exceed:

Dielectric strength = 25kV/mm

Insulation = 10 0hm metre

The following minimum criteria shall be satisfied:

SPECIFICATION B

This tape shall be made up of a non-woven synthetic fiber carrier impregnated and coated on both sides with a compound incorporating high melting point bitumen (Densotherm or similar approval). During application the tape shall be correctly heated, and laps adequately sealed all in accordance with the instructions and recommendations of the supplier.

Before the application of any protective material, the surface of the pipe shall be thoroughly cleaned, and all loose or damaged pipe coating removed. All ridges, depressions and steps in the surface shall be filled with an approved filler so as to present a smooth uniform surface. After the filler has hardened, the entire surface to be wrapped shall be primed with a primer or otherwise treated as recommended by the supplier of the tape.

The protective tape shall be applied as a spiral wrap with not less than 50% overlap. The width of the tape shall be appropriate for the section to be wrapped."

PSL3.9.5 JOINTS, NUTS, BOLTS AND WASHERS

DELETE AND REPLACE WITH THE FOLLOWING:

"All bolts and nuts shall comply with the requirements of the relevant sections of SANS 1700 and shall be of Grade 4.6 steel. Washers shall be provided at each nut and shall be of the same material (or coating where applicable to match the bolt and nut. Nuts and bolts subject to vibration shall be machined finished fitted with plain washers and treated with "Loctite" or equivalent.

Bolts other than jacking bolts shall project not less than 3mm and not more than 10mm from the heads of the nuts after tightening.

All bolts to be built into concrete work as well as bolts to be installed above ground level (outside buildings), directly above and under water shall all be of stainless-steel grade 304. Bolts for flexible couplings and flanges for underground installation shall be hot dip galvanized. Bolts to be installed inside buildings shall be hot dip galvanized. Galvanizing shall be in accordance with the Standard Corrosion Protection Specification (Heavy coating).

Suitable plastic sleeves and/or washers shall be used for protection against corrosion by bi-metallic action".

PSL3.9.6 CORROSIVE SOIL

ADD THE FOLLOWING TO THE EXISTING CLAUSE:

"Steel pipes, pipe fittings and steel flanges in contact with soil shall over and above the protection as described above be protected as specified in Clause 3.9.3 with "DENSO" tape and/or mastic or approved similar. Application shall be strictly in accordance with the manufacturer's instructions. A polyethylene tape of 300 microns minimum shall be spirally wrapped over the petrolatum tape and fixed to the clean pipe ends with pressure sensitive tape."

PSL3.11 VALVES

PSL 3.11.1 VALVE TYPES

PSL3.11.1.1 Valves shall spheroidal graphite iron resilient seal gate valves, double flanged, nonrising spindle, manually operated, class 16 to SABS 664 and 665 and be corrosion protected.

PSL3.11.2 FLANGES

Flanges shall be Class 16 cast iron flanges and shall conform to the requirements of SANS 1123 (table 1600/3).

PSL3.11.3 INSPECTION AND TESTING

PSL3.11.3.1 Any inspection or test at the manufacturer's works will not exempt the Supplier from any obligation under this specification.

PSL3.11.3.2 A copy of the durability test as specified in SANS 664-1999 should be supplied with the sample valve (If available) which will be a strong recommendation.

PSL3.11.4 TESTING OF VALVES

PSL3.11.4.1 All assembled valves shall be so constructed that there is no leakage of water when subjected to an internal hydraulic test pressure of 3 200 kPa for a period of not less than five minutes.

PSL3.11.5 IDENTIFICATION AND MARKING

PSL3.11.5.1 The following information must be legibly and indelibly cast or embossed on each valve body.

(i) Manufacturer's name or trade name or trademark.
(ii) Valve size
(iii) Class of valve e.g., Class 16, PN 16....

PSL3.11.5.2 A metal identification plate must be permanently fixed to each valve. The plate must bear the following information:

(i) Date of manufacture
(ii) Type of trim, where applicable.
(iii) Mass in kg

PSL 3.11.6 FINISH

PSL3.11.6.1 All parts must be smooth and free from fins and burrs.

3.11.6.2 All surfaces must, after they have been cleaned in a manner appropriate to the type of primer used, be coated with a primer that complies with the requirements of SANS 723 or SANS 1345 and having a dry film thickness of 10-25 microns.

PSL 3.11.7 END CONNECTIONS

PSL 3.11.7.1 Valves must be flanged to SANS 1123 table 1600 with the bolt holes drilled off centre. Flange stud bolts must be supplied and fitted if required by the valve design.

PSL3.11.7.2 Body ends must be sealed during delivery and storage to prevent entry of foreign matter. The front faces of flanges shall be flat faced, fully machined, parallel to one another, with appropriate bolt holes.

PSL 3.11.8 BOLTS

PSL3.11.8.1 Bolts and nuts must comply with the requirements of SANS 135 or SANS 136. Body gaskets in contact with water must be non-hydroscopic.

PSL 3.12 SUBMERSIBLE PUMPS

The duty point for the Pump Station No.1 is H = 23.5m; Q = 192m³/hour and static head equal to 17.13m. Minimum suction 150NB and minimum discharge (100NB-150NB) connected to 250mm diameter UPVC class 16 pumping mains and shall be of the nonclog type and corrosion protected. Pump curves shall be supplied with pumps. Performance curves shall be based on a reproducible and certified test carried out in an approved testing facility, such as the SABS.

The duty point for the Pump Station No.2 is H = 13m; Q = 430m³/hour and static head equal to 11.1m. Minimum suction 200NB & minimum discharge (200NB – 250NB) connected to 315mm diameter UPVC class 16 pumping mains and shall be of the nonclog type and corrosion protected. Pump curves shall be supplied with pumps. Performance curves shall be based on a reproducible and certified test carried out in an approved testing facility, such as the SABS.

NB: Important to note;

- All pumps must be fitted with motor and cooling mechanism or jacket.
- Pumps function as one on duty and the other on standby.
- All pumps are normal submersible and should be supplied with 10m power cable and hanger bar.
- Pumping is being done for raw sewers and pumpstations are fitted with screening chambers.

PSL 3.13 ELETRICAL INSTALLATION

Item No.	Reference Specification	Description
PSL3.13.1	SABS 1065-2	<u>CONDUITS</u>

All plain end metal conduits must be galvanized to ensure electrical continuity through the push-on connectors and adaptors.

	SABS IEC 60614-2-5	Conduit and conduit accessories must bear the mark of approval of the South African Bureau of Standards.
PSL3.13.2	SANS 10142	DISTRIBUTION BOARDS
	SABS 1765	Specification for distribution boards with rated frequency not exceeding 50 Hz, and rated voltage not exceeding 1000 V a.c. or 1500 V d.c. and with a short-circuit withstand current rating of less than 10 kA. Type: Mark specification for safety.
	SABS IEC 60439-5	Specification for cable distribution cabinets intended for stationary outdoor installations exposed to the public, but where only skilled personnel have access for their use.
		Kiosks must be of ample size to accommodate the specified equipment and have 25% free space for future equipment.
		The color must be "FLAG GREEN", color E08 or "LIGHT STONE", color C37 of SABS 1091.
		A tin of matching touch-up paint (not smaller than 500ml) must be provided with each consignment.
		All equipment must be labelled, and accurate descriptions must be given in English on legend cards.
		Labels must be trifoliate with black letters engraved on a white background.
		The kiosk label must be riveted to the kiosk.
		The kiosk label must be in a prominent position on the front of the kiosk and must give the kiosk name and/or number. (KIOSK B6)
		The lettering must be at least 10 mm high.
		Equipment labels must give a clear description of the equipment or the equipment number if there is not enough space to give a full description.

The lettering must be at least 5 mm high. Provide one label directly below each item of equipment.

Where equipment is labelled with numbers only, provide a legend card with detailed descriptions of the numbered equipment.

Install the legend card on the inside of the door behind a durable, transparent plastic cover.

The legend card holder must be spot-welded to the cubicle door before painting. In the case of outdoor cubicles, the legend card must slide into the legend card holder from the side instead of from the top to protect it against rainwater damage.

PSL3.13.3 SANS 1507 CONDUCTORS

High conductivity annealed stranded copper.

Shall be supplied and installed in one length.

No joints allowed where the installed length is less than the standard supplied length.

Insulation (where required) shall be general purposed PVC 600/1000V grade.

PSL3.13.4 SABS IEC 60884-1 SWITCHED SOCKET OUTLETS

Specification for plugs and fixed or portable socket-outlets for a.c. only, with and without earthing contact, with a rated voltage above 50 V but not exceeding 440 V and a rated current not exceeding 32 A, intended for household and similar purposes, either indoors or outdoors.

PSL3.13.5 SANS10400-S:2011 SWITCHES

Switches must be of the rocker operated micro-gap type rated at 16A, 220/250V.
Switches must have protected terminals for safe wiring.
Switches must have silver contacts.

It must be possible to individually change any switch of multi-lever switches.
The yoke strap must be slotted to allow for easy alignment.

PSL3.13.6	SABS152& SABS IEC 60947-3.	ISOLATORS The switch-disconnectors must have a high-speed closing and opening mechanism. The switch-disconnectors must be suitably rated for the continuous carrying, making and breaking of the rated current specified as well as the through-fault current capacity as specified. To distinguish the switch-disconnectors or isolators from circuit breakers the operating handles must have a distinctive color and/or the switch must be clearly and indelibly labelled "ISOLATOR". Three pole switch-disconnectors must be mechanically interlocked to disconnect all three poles simultaneously. Four pole switch-disconnectors must be supplied with late making or breaking contacts for the neutral pole as specified.
PSL3.13.7	SABS 1464-1	LUMINAIRES Specification for the safety of general-purpose fixed luminaires for use with tungsten filament, tubular fluorescent and other discharge lamps that operate at supply voltages not exceeding 1000 V. Type: Mark specification for safety. *
	SABS 1464-2	Specification for the safety of recessed luminaires for use with tungsten filament, tubular fluorescent and other discharge lamps that operate at supply voltages not exceeding 1000 V. Does not apply to air-handling or liquid cooled luminaires. Type: Mark specification for safety. *
PSL3.13.8	IEEE-C57.12.80-2010	TRANSFORMERS

		Pole mounted. Oil cooled. Supplied complete with surge arrestors.
	D-DT-1860	
PSL3.13.9	SABS 1411-1	CABLES & CONDUCTORS – GENERAL
	SABS 1411-2	Materials used in the manufacturing of insulated electric cables, cords and conductors must comply with the relevant standards below: Specification for copper used in insulated electric cables. Covers solid, stranded and flexible circular conductors, and solid and stranded shaped conductors. Specification for PVC insulating and protective cover materials in electric cables and flexible cords.
	SABS 1411-3	Specification for elastomer components of electric cables and flexible cords.
	SABS 1411-5	Specification for non-metal components of electric cables and flexible cords that do not contain halogen in their chemical composition and have reduced flame propagation properties.
	SABS 1411-6	Specification for three types of metal armour materials that are components of electrical cables and that provide protection against mechanical damage.
PSL3.13.10	SABS 1507	PVC INSULATED CABLES (300/500V to 1,9/3,3kV) Insulation grade to be 300/500 V to 1,9/3,3 kV. Intended for use in fixed installations. Armoring (where required) is to be Steel Wire Armoring. Conductors to be Annealed Stranded Copper. All cables must be new when delivered to site. No joints will be allowed for cable lengths of less than 300m.

Cables are to be labeled at all terminations with punched metallic bands or labels or tags (Refer also to SABS 0142 for identification of cable cores and phases).

Identification labels must indicate the size of the cable and where it feeds to or from.

PVC tape with punched characters is not an acceptable label.

Indicate the identification numbers of cables on the "as built" drawings of the installation.

Only fully competent personnel may install, bend, join and/or terminate cables. These personnel must acquaint themselves with the instructions, requirements and recommendations of the manufacturer for the installation of the particular cables.

PSL3.13.11 SABS 1213

PSL3.13.12 (Profile to be approved by the Engineer)

Glands for terminating PVC/PVC/SWA/PVC cables must be adjustable. Glands must be suitable for general purpose 600/1000 V Grade cable with steel armouring.

<u>GLANDS</u>

approved cable route and cable joint markers in positions as shown on drawings or indicated on site.

The cable marker must be made of concrete with a capping at the upper horizontal surface of a fine mixture.

After removal from the mould, the cable marker must be cured in the approved manner by wetting or immersion.

The capping at the upper horizontal surface of the marker must be about 30mm deep and be of a 1:3 cement and sand mixture.

<u>CABLE MARKERS</u>

Allow for the manufacture, supply and installation of

This fine mixture is for providing a suitable base for forming the recessed lettering and directional double-headed arrow.

The remaining portion of the marker must consist of an adequately compacted concrete mixture of 1:3:4 cement, sand, and crushed stone.

The lettering and double-headed directional arrow of the upper horizontal surface of the marker must be recessed to a depth of at least 5 mm.

Install cable route markers along all underground cable routes.

Install cable markers at the beginning and end of a cable run (e.g., where a cable enters a substation or building), at all changes of direction, above cable sleeve entries and exits and at intervals not exceeding 50 m along the cable route.

Cable markers show the actual route of a buried cable, therefore, locate

the cable markers at such intervals that the deviation of the actual buried position of the cable from a straight line between any two adjacent cable markers does not exceed 500 mm horizontally.

The cable joint marker is located above the joint of a buried cable. Indicate the position of cable markers on the "as built" drawings.

First delivery will not be considered until the cable markers are installed neatly in their positions.

PSL3.13.13 SANS 1507- CABLE SLEEVES & PIPES

3:2015 Where cables cross under roads, railway tracks, other service areas, etc. and where cables enter buildings, install the cables in ribbed and reinforced PVC pipes.

Asbestos cement or earthenware sleeves are also acceptable, but pitchfibre sleeves are not allowed.

Join the pipes in accordance with the manufacturer's instructions. Install sleeves to crossroads and railway tracks at right angles.

Sleeves must have a minimum diameter of 100 mm, except at road crossings; the minimum diameter must be 150 mm.

Sleeves must extend at least 2 m beyond the tracks of a railway line or of the outermost tracks where there is more than one line. In the case of roads, the sleeves must extend at least 1 m beyond the road edge or kerb on both sides of the road.

Install sleeves with a 1:400 fall for water drainage.

Seal the ends of all sleeves with a non-hardening watertight compound after the installation of cables. Seal all sleeves intended for future use in the same manner.

Backfill trenches at least 300 mm on top of sleeves before compacting to avoid damage to the sleeves.

Complete the backfilling and compacting as presented elsewhere (in this specification).

PSL3.13.17 DIMENSIONS OF CABLE TRENCHES

Cable trenches for one or two cables must not be less than 300 mm wide and need not be more than 500 mm wide.

Maintain the specified width for the total trench length.

The trench depth should be 800 mm.

Where trenches change direction or where cable slack must be accommodated, ensure that the requirements of the manufacturer regarding the bending radii of cables are met when determining trench widths.

Payment is calculated using the running meter rate or the volumetric excavation rate (whichever is specified in the bill of quantities) and the specified maximum dimensions or the actual dimensions, whichever is the lesser.

PSL3.13.18

BEDDING

Fill the bottom of the trench across the full width with a 75 mm thick layer of sandy soil sifted through a 6 mm mesh and level it off.

Use only sandy clay or loam soil with a satisfactory thermal resistivity (not exceeding 1,5°C m/W) for this purpose. Do not use sea sand, ash, chalk, peat, clinker or clayey soil.

Crusher sand and river sand are acceptable.

Where no suitable soil is available on site, import fill from elsewhere. Include the cost of importing soil for bedding in the unit rates for excavations

.

Provide a further layer of bedding that extends to 75 mm above the cables after laying the cables

In the case of HV cables, provide an additional 200 mm cover of sifted soil from the backfill material on top of the 75 mm bedding above the cable to lay the protective concrete slabs on.

PSL3.13.19

BACKFILLING

Install a coloured plastic marking tape 300 mm beneath the final ground level directly above the cables.

Backfill trenches with suitable soil to ensure settling without voids. The maximum allowable diameter of stones presents in the backfill material is 75 mm.

Allow in the tender rates for importing suitable backfill material if required. Compact the backfill in 150 mm thick layers.

Backfill the first layer by hand. Allow for final settlement when backfilling. Compact the excavations at paved areas to the original density of the surrounding material before reinstating the surface finish.

The refilled trench must be maintained at the Contractor’s expense for the duration of the contract.

Remove and dispose of all surplus backfill material.

Restore damage to concrete walkways, tarred surfaces, lawns and flowerbeds, to their original finish after installation of cables.

Remove lawns in sods and carefully replace the sods after installation of the cable.

Ram the sods down and neatly level it off with sifted soil.

Properly water the restored area of the lawn.

In the case of roadways or paved areas, compact the excavations to the original density of the surrounding material before reinstating the surface finish.

WARNING TAPE

PSL3.13.20 The tape must be yellow and marked with the words "ELECTRIC CABLE BELOW". These markings must not be more than 1 m apart from centre to centre.

PSL 3.14 PUMP OPERATION AND MAINTENANCE MANUAL

All equipment must have corrosion resistant metal tags attached to it, giving the most important technical details.
Three copies of the operating and maintenance manuals must be supplied giving the following information:

- A flow diagram of the pump station showing all the components as well as the working pressure flow rates.
- Operation of the pump station. Maintenance of the pump station. Complete list of emergency spares to be kept in store
- A list of spares with specifications, names and addresses of suppliers of all components used in the pump station, pipework and rising main.
- A complete set of the as-built drawings Electrical panel drawings

PSL3.14.1 ELECTRO-MECHANICAL SPECIFICATION COMPLIANCE CHECKLISTS.

PSL3.14.1.1 PUMP STATIONS

A…. PS1& PS2: MOTOR CONTROL CENTER (MCC) - OPERATOR PANEL

Item No.	Compliance Requirement	Yes / No. (*In the event of a "No", state an equivalent or better capability*)
1	Indoor type panel.	
2	Star/Delta Motor Starters.	
3	Motor Controller for **two** x 21kW / 380V Pump motors.	
4	The following operator interface pilot lamps or indicators are to be installed / provided:	
4.1	✞ Pump **A** "Stopped" RED indication.	
4.2	✞ Pump **B** "Stopped" RED indication.	
4.3	✞ Pump **A** "Running" GREEN indication.	
4.4	✞ Pump **B** "Running" GREEN indication.	
4.5	✞ Pump **A** "Tripped" RED indication	
4.6	✞ Pump **B** "Tripped" RED indication	
4.7	✞ Pump **A** "Failure to Start" RED indication.	
4.8	✞ Pump **B** "Failure to Start" RED indication.	
4.9	✞ "Sump level low low" CLEAR or WHITE indication.	
4.10	✞ "Sump level low" CLEAR or WHITE indication.	
4.11	✞ "Sump level high" CLEAR or WHITE indication.	
4.12	✞ "Sump overflow" RED indication.	
4.13	✞ "Power On" GREEN indication.	
5	The following selector switches are to be installed / provided:	
5.1	✞ Power ON/OFF selector switch.	
5.2	✞ Manual/Automatic Mode selector switch.	
5.3	✞ Pump **A** /Pump **B** "Duty/Standby" selector switch.	
5.4	✞ Voltage selector switch.	
6	The following operator push buttons are to be installed / provided:	
6.1	✞ Pump **A** "Start" GREEN push button.	
6.2	✞ Pump **B** "Start" GREEN push button.	
6.3	✞ Pump **A** "Stop" RED push button.	
6.4	✞ Pump **B** "Stop" RED push button.	
6.5	✞ "Lamp Test" BLUE or GREY push button.	
7	Includes "Pump **A** Running Hours" meter.	
8	Includes "Pump **B** Running Hours" meter.	
9	Includes "Pump **A** Current" analogue meter.	
10	Includes "Pump **B** Current" analogue meter.	
11	Includes "Voltage" analogue meter.	
12	Includes a digital indication of sump wastewater level in mm or meters.	
13	Supplied complete with a single-phase welding socket.	
14	Supplied complete with a 16A switched socket outlet.	
15	Details of the MCC-Operator Panel to be are communicated to the Engineer for prior approval.	
16	Functionality to be configured as per the Engineer compiled Motor Controller operating philosophy.	
17	**Note:** To be factory tested and witnessed by the Engineer prior to shipping to site.	
18	**Three copies** of Operating and Maintenance documentation to be supplied.	
19	As-built installation details / drawings to be supplied.	
20	Critical spares list to be provided.	

A. *PS1& PS2: SEWER PUMPS CONTROL PHILOSOPHY*

B. *PS1: OPERATOR PILOT LAMPS INDICATIONS (FUNCTIONAL SPEC COMPLIANCE)*

C. *PS2: OPERATOR PILOT LAMPS INDICATIONS (FUNCTIONAL SPEC COMPLIANCE)*

D. *PS1 & PS2: ULTRASONIC WW LEVEL SENSOR- TRANSMITTER (SPEC COMPLIANCE)*

Item No.	**Compliance Requirement**	**Yes / No.** (*In the event of a "No" state an equivalent or better capability*)
1	Waterproof type.	
2	For waste water level sensing.	
3	Transmitter & Receiver (Dual use type)	
4	Ambient temperature compensated (for at least the range of -40°C to +60°C).	
5	Directivity of 80° to process medium level (i.e. capable of acceptable operation when mounted perpendicular to the process medium surface level).	
6	Detection range of 200mm-to-5000mm or better.	
7	No objects/obstructions between the sensor (signal cone) and the level to be measured.	
8	Has means of generating a "need for sensor cleaning" alarm function in the event of the sensor being dirt coated.	
9	To be mounted on vendor-supplied mounting hardware.	
10	No hard-conduit-wiring for the sensor wiring.	
11	Is "foam tolerant" in detecting the true level of the process medium.	
12	**Note:** Details of selected level sensor-transmitter are to be communicated to the Engineer for prior approval before procurement.	
13	**Three copies** of Operating and Maintenance documentation to be supplied.	
14	Redlined as-built installation details / drawings to be supplied.	
15	Critical spares list to be provided.	

PSL 7 TESTING

PSL 7.2 INITIAL TESTS ON WELDED STEEL PIPES

PSL 7.2.2 RADIOGRAPHIC EXAMINATION

Fifteen percent of all welded joints, or when ordered by the Engineer, shall be examined radiographically.

ADD THE FOLLOWING NEW CLAUSE:

PSL 7.2.3 HYDROSTATIC TEST

(a) All pipes and fittings shall be subject to an approved hydrostatic test and to a test pressure determined as follows:

$$P = \frac{2000\ t\ f}{D}$$

Were

P = test pressure in kPa

F = 85 percent of the guaranteed minimum yield strength in MPa for steel plate

D = outside diameter of the pipe in mm

T = wall thickness in mm.

(b) Hydrostatic testing shall not be carried out until all aspects of fabrication have been completed.

(c) The pressure shall be applied steadily by approved means and maintained without variation sufficiently long for proof and inspection.

(d) Should water sweat or ooze from any part or any defects of any nature be discovered the pipe shall be emptied and the defects made good. The pipe shall then be tested again. Should a pipe, after repair, fail to pass the second hydraulic test the Employer may order its rejection.

(e) The fact that any pipe may have passed the hydraulic test at the works shall not exempt The Contractor from his liability under Clause 7 of the General Conditions of Contract 2010.

(f) If a pipe fails to pass any of the above tests in Clauses PSL 7.2.1, PSL 7.2.2 or PSL 7.2.3, it shall be rejected, but the Employer may permit repairs or alterations to be made to enable the pipe to pass the test.

(g) The Employer may require one or more pipes to be tested to destruction. If practicable the Employer may require The Contractor to repair the pipes and retest them. The cost of repairs will be paid by the Employer as an extra to the Contract."

PSL 8 **MEASUREMENT AND PAYMENT**

PSL 8.2 **SCHEDULED ITEMS**

ADD THE FOLLOWING NEW SUBCLAUSE:

PSL 8.2.16 DEMOLISH STRUCTURE

a) Description of connection, types and diameters involved……...Unit: No b)

Etc. for the other items

The unit of measurement shall be sum for several types of connection into existing line mains

The rate shall cover the cost of excavation, plant and labour required, demolishing the existing chambers, safeguarding the existing valves and specials from damage and safely disposing of the rubble material.

ADD THE FOLLOWING NEW SUBCLAUSE:

PSL 8.2.17 CONNECT TO EXISTING MAINS

a) Description of connection, types and diameters involved……...Unit: No b)

Etc. for the other items

The rate shall cover the cost of isolating, cutting, excavation (up to 2 m deep), bedding, dewatering and exposing the existing main at the connection point, supply necessary fittings for under pressure connections for the section of the mains as required, temporary

support, safety precaution backfilling and the removal of surplus and unsuitable material. The supply and installation of fittings and couplings shall be measured separately.

ADD THE FOLLOWING NEW SUBCLAUSE

PSL 8.2.18 RECOVER VALVES, FITTINGS, SPECIALS, ETC

a) Description of item……Unit: No.

b) Etc. for another item

The unit of measurement shall be number of described items to be recovered
The rate for the recovery of the above shall cover the cost of the excavation, breaking out existing brick or precast concrete, and removal of the valves, fittings and specials removal of debris and spoil to The Contractor ’s dump site and importing suitable backfill material, the plugging with concrete of the open ends of the abandoned water mains, the removal of the surface boxes, backfilling to required density, the handling and transporting of the recovered materials to the Responsible Depot, the listing of the salvaged materials and the backfilling and compaction of the chambers and reinstatement of surface covering.

PSL 8.2.19 SUPPLY AND INSTALL VALVES…….....Unit: No a) Gate Valves

All gate valves shall be flanged Resilient seal or wedge type isolation valves to SABS 664, Class 16, anti-clockwise closing. All valves 400 mm and bigger are to be supplied with an approved **open gear box assembly** as follows:

1. For the 600mm Valve:
   Multi-Stage Spur gearing with 6:1 minimum ratio, having operating spindles on the input spindle and at a stage where the valve can be stroked without exceeding the maximum input torque of 275Nm if no differential pressure is applied to the valve.

   1.1 For the 450mm Valve:

   Single-Stage spur gearing with 4:1 ratio having one spindle to operate with a 1:1 ratio and a second spindle to operate with a 4:1 ratio. A maximum input torque of 240Nm is recommended.

2. The gears shall be robust, and machine cut, and their mounting shall be of substantial design.

3. Each pinion gear spindle shall be supported between two bearings or alternatively one bearing of enough depth to prevent misalignment of the opinion gear and spindle. The bearings shall be fitted with bronze bushes and shall be provided with grease nipple

4. lubricating points and shall be lubricated prior to delivery. All points to be lubricated shall be fitted with 1/8-inch BSP straight nipples for grease-gun lubrication. Adequate lubrication shall be provided for all gear and indicator bushes.

5. All valves shall open by anti-clockwise rotation of the main spindle and gearboxes shall be fitted with an intermediate idler where necessary.

6. In the case of Type, A and Type B gearing a shear pin or other safety device shall be incorporated between the high and low gears to prevent damage to the valve if excessive force is applied. Two spare pins shall be attached to each valve.

7. Shear pins shall be easily replaced in the field. Hard-driven pins will not be accepted as shear pins.
   b) Air Valves

   Air valves must be double acting air valves of compact single chamber design with both small and large air release orifices inside the chamber. The valve must also act as a vacuum breaker, with intake capacities of 60 % of discharge rates given.

   The unit measurement for valves shall be number of each described assembly

   The rate shall include supply installation and testing including for all corrosion protection, bolts, gaskets, and any other contingency work.

PSL 8.2.21 SUPPLY AND INSTALL FITTINGS ASSEMBLY…….....Unit: No

The unit of measurement shall be number of a described item to be installed. The applicable specification contained herein on various clauses will apply to the various pieces, for example **PSL 8.2.19** will be applicable to any valve and air valve in the assembly.

The rate shall include supply installation and testing including for all corrosion protection, bolts, gaskets, and any other contingency work to enable the proper operation of the fittings assembly.

PSLC CABLE DUCTS

PSLC 3 MATERIALS

PSLC 3.1 DUCTS

ADD THE FOLLOWING:

PSLC 3.1.1 SPLIT UPVC PIPES

Split pipes shall only be used to provide ducts for existing services that cannot be severed and threaded through the ducts. The pipes shall be cut accurately in the middle, and opposite halves shall be matched as sawn. Split pipes shall be placed around the service, firmly bound by steel straps, and encased in concrete."

PSLC 3.4 CABLE DUCT MARKERS

ADD THE FOLLOWING:

"A cable duct marker shall consist of a 300 mm x 300 mm x 100 mm deep, class 20 MPa/19 mm concrete block, connected by means of a non-ferrous metal strip to a temporary plug to seal the end of the duct. The plug shall prevent moisture or soil from entering the duct. The metal strip shall be firmly connected to both the plug and the concrete block. The concrete block shall be positioned not further than 0,5 m horizontally from the end of the cable duct. The face of the concrete block shall be clearly marked "E" to indicate electricity cables."

PSLC 8 MEASUREMENT AND PAYMENT

PSLC 8.2 SCHEDULED ITEMS

PSLC 8.2.5

SUPPLY, LAY, BED AND PROVE DUCT

REPLACE THE PAYMENT PARAGRAPH WITH THE FOLLOWING:

"Separate items are scheduled for each diameter of duct.

The rates shall cover the cost of providing all the materials and the cost of laying the ducts, installing the draw wire, jointing, bedding and providing all as specified."

PSLD SEWERS

PSLD 1 MATERIALS

PSLD 1.1 PIPES, FITTINGS AND PIPE JOINTS (SUBCLAUSE 3.1)

Sewer pipes used in this contract shall be uPVC class 34 (Heavy Duty) to SABS 791 as amended with a minimun wall stiffness of 300 kPa

PSLD 1.2 MANHOLES, CHAMBERS ETC. (SUBCLAUSE 3.5)

Manholes shall be pre-cast concrete rings with pre-cast concrete lid and frame, Heavy Duty, SABS 566 approved, as in typical details drawing, 12214-C-S-STD-xxx.

Sewer manholes that consist of precast concrete sections shall comply with SABS 1294

(1993) with step irons located on the downstream side, and are to be of dolomitic concrete.

For all manholes channeling shall be clay channels. Alternative offers can be done separately by the contractor for plain concrete finish steel trowelled smooth, but no PVC channels will be allowed

CONCRETE (SUBCLAUSE 3.5.4)

PSLD 1.3

Concrete shall be made with ordinary Portland cement complying with SABS 471. The minimum cement content shall be 420 kg/m³ and a minimum cement: water ratio of 2,2. Only dolomitic aggregates shall be used.

MORTAR (SUBCLAUSE 3.5.6)

PSLD 1.4

Mortar shall be composed of one part of ordinary Port-land cement to 3 parts of sand by volume.

PSLD 1.5 MANHOLE COVERS AND FRAMES (SUBCLAUSE 3.5.8)

All manhole covers and frames shall comply with SABS 558 and shall be dolomitic concrete with a steel rim to the cover. Covers shall be either heavy duty or medium duty capable of test loading of 135 kN and 40 kN respectively.

PSHC CORROSION PROTECTION OF STRUCTURAL STEELWORK

PSHC 5 MATERIALS

PSHC 5.7 COATING SYSTEM

PSHC 5.7.1 Structural Steelwork

The coating system for the structural steelwork shall be as follows:

a) Within four hours of cleaning in accordance with the requirements of Clause 5.4.3. apply one coat of Plascon UC 182 zinc phosphate primer to a minimum dry film thickness of 35 microns.
b) After erection of the steelwork apply a touch up coating of primer as above to all areas of the steelwork where the shop coat of primer has been damaged.
c) After allowing a minimum of 18 hours drying time for areas that have received touch up coatings, apply one coat of Plascon white Merit universal undercoat

Code UC1 to a minimum dry film thickness of 30 microns. Prior to application the undercoat shall be tinted to a shade lighter than the final finishing colour using Plascon liquid strainers.

d) After allowing the undercoat to dry for a minimum of 18 hours, apply finishing coat of Plascon Alkyd enamel to a minimum dry film thickness of 30 microns. The non-volatile vehicle of the finishing coat shall contain at least 24% phthalic anhydride.

The colour of the finishing coat shall be selected and approved by the Engineer.

All proprietary coatings specified above may be replaced by paints from another manufacturer subject to approval by the Engineer. In order to obtain such approval, the Contractor must submit detailed specifications of the proposed coatings to the Engineer.

FENCING AND GATES

PZ

GENERAL

The Engineer will be responsible for indicating the exact positions of all gates, fencing lines and corner posts. The Contractor shall be responsible for setting out the fencing in accordance with the prescribed alignment.

All bushes, trees, debris, rocks and other obstructions shall be removed from the fencing line to produce a clear even strip a minimum of 500mm wide on either side of the fencing line.

PZ 1 MATERIALS & CONSTRUCTION

PZ 1.1

STRAINING POSTS

Straining posts shall be erected at ends and corners and intermediately at not exceeding 45m centres with standards or intermediate posts at not exceeding 3m centres.

PZ 1.2 CHAIN LINK WIRE MESH

Fencing and wire shall comply with SABS specifications 675 and 1373 and shall be Type 1 fully galvanized to Class A. Chain link fencing shall have a mesh size of 50mm and be of the height and type specified, woven from 2.5mm diameter wire. The edges of wire mesh rolls shall be clinched and shall have a durable label attached indicating the manufacturer's name, type and description of fencing, nominal diameter of wire, nominal width and length of roll ad size of mesh. Wire for the lacing of wire mesh to

posts, gate framing etc. must be identical to the wire forming the fencing. The wire mesh fencing shall be tied at 450mm centres to straining wires with binding or tie wire.

PZ 1.3 STRAINING WIRE

Straining wire shall be Type 1 galvanised wire or 3.15mm diameter. The bottom straining wire shall be fixed 50mm above the levelled ground and each straining wire shall be strained between posts and tied to same by turning each wire twice round the post and tying off by twisting it a minimum of three turns around the straining wire.

PZ 1.4

FLAT WRAP RAZOR WIRE

Flat wrap razor wire shall be 500mm roll diameter and fully galvanised, installed in accordance with the manufacturer's instructions.

PZ 1.5

BINDING OR TIE WIRE

Binding or tie wire shall be Type 1 galvanised wire of 2mm diameter.

PZ 1.6

GALVANISING

Galvanising shall comply with SABS 763 and all posts, stays, gate framing etc. shall be hot dipped galvanized after fabrication with Class A galvanizing with all interior and exterior surfaces fully coated.

PZ 1.7

MILD STEEL TUBULAR STRAINING, GATE AND INTERMEDIATE POSTS

Mild steel tubular straining, gate and intermediate posts shall comply with CKS 32. Posts and stays shall be fitted with base plates welded on with each base plate holed 25mm in the centre to permit intrusion of galvanizing. Tubular posts not exceeding 51mm diameter shall fitted at the top with a machined steel plug pressed or welded into the end of the post. The top end of posts exceeding 51mm diameter are to be capped with 1.60mm thick pressed mild steel domed cap welded on. Gate posts are to be drilled and fitted with mild steel ferrules welded into position to receive 20mm diameter mild steel hinges. Stays shall have the top end flattened, bent as required and holed 12mm for bolting to the post. Threaded 12mm diameter studs or approved stay collars are to be welded to the posts to locate and secure the top ends of stays.

PZ 1.8 GATES

a) sliding gate size shall be of the sizes shown on the drawings (to be approx. - 6meter x 2,450mm measured on site)

- Outer frame 100mm x 50mm x 3mm tube
- In between uprights 38mm x 38mm x 3mm tube
- Max gaps between 120mm
- Fillet weld all sides full
- Pedestrian gate with heavy duty bullet hinges
- 800mm x 2,250mm. 50mm x 50mm 3mm tube frame. 38mm x 38mm x 3mm tube uprights. Fillet weld all around.
- Upright guide and lock poles 100mm x 100mm x 3mm tube. Tube tops to have rain shields and guide roller bracket fitted
- Fit stoppers both ends on upright poles
- Tamper proof lock mechanism to be fitted on both pedestrian and main gate
- Gates to be finished 2 cotes red oxide and black enamel final cote
- Bottom rail 50mm x 50mm x 6mm angle with 16mm solid round top
- Fish tails 120mm long 250mm intervals welded on angle bottom rail to be cast
- in concrete (20mpa) strong. 5meters long x 200mm deep x 150mm wide
- Use proper shuttering on all civil work
- Upright 100mm poles cast in concrete 600mm deep x 250mm x250mm (20mpa) strong
- Upright poles to have fish tails welded on pole to secure in concrete at bottom

b) Single and double gates shall be of the sizes shown on the drawings formed with mild steel tubular framing all round, covered with chain link wire mesh fencing and flat wrap razor wire of the same type used for the fencing laced to the framing. Tubular framing shall be mitred and welded at the corners and at all other intersections the tubular framing shall be scribed and welded together with all welds ground smooth.

Gates shall be hung on 20mm diameter adjustable eye bolt hinges wrapped around the gate framing with a collar welded on to the gate framing above the eye bolt hinge. Each hinge shall be fitted with two nuts and two washers.
Each single gate and one leaf of a double gate shall be fitted with a gate latch formed of 25mm x 6mm mild steel bracket, 550mm girth, twice bent to U-shape with centre section 150mm high and with ends scribed and welded to the tubular stile of the gate. A locking bar of 25mm x 6mm mild steel plate, 100mm long, twice holed 13mm diameter for a shackle of a padlock and for a padbolt, shall welded to the inside of the bracket. The sliding pad bolt shall be formed of 12mm mild steel rod 220mm long with 25mm x 6mm mild steel flat bar 60mm long welded on at one end and holed 13mm diameter for shackle of the padlock. The style of the gate and the locking post or locking stile of the double gate shall be holed for and fitted with a mild steel ferrule welded in to receive the padbolt. In addition, fittings to each leaf

of the double gate shall comprise 50mm x 6mm mild steel locking bar 80mm long holed 20mm diameter for the shackle of the padlock and welded to the locking stile of the gate, and a drop bolt formed of 16mm diameter mild steel rod, 575mm girth once bent L-shape, fitted through and including 20mm internal diameter sleeve welded to the gate at the bottom corner with a 12mm diameter mild steel peg stay 25mm long welded on to the gate frame. A concrete gate stops lock 230mm x 230mm x 230mm deep with two 20mm internal diameter mild steel sockets each 75mm long cast into the top shall be embedded into the access way surface between each pair of double gates in the closed position, and a similar stop block with one socket for each leaf of the double gate in the open position.

Each gate shall be provided with an approved 51mm brass padlock with hard steel shackle and two keys.

PZ 1.9 PRECAST PRESTRESSED CONCRETE POST AND PALE FENCING

Concrete palisade heights shall be 2.4m(8-foot-high) and should have extended posts (500mm) between which flat razor wire to ensure it is secured.

- Installation of concrete palisade
  Each post is embedded to a full depth in concrete in a foundation of at least 400 X 400 X 600mm. Foundations are 19/25MPa. Strong mixtures are available depending on the specifications required. A full method statement is available on request.
- The strength of concrete palisade
  Only the highest quality raw materials are used. Our standard concrete strength is between 25 MPa. We supply (and guarantee) stronger strengths of 25, 30 and 35 MPa. All reinforcing steel wires are free of rust, loose scale, flux, grease or oil substances.
- Main Anchor Posts

  2. 4-meter fence (Size: Post 3000 X 220 X 150 tapered to 80mm). Reinforced with 4 X 6mm spring steel wires. Weight: 144kg. Extended post weighs 181kg. The posts are not pre-stressed.

  Distance between posts are 2.0-meter centre to centre. The top of the posts are angled at 45 degrees. Posts are spaced 20. meter centre to centre. The posts are slotted to take the horizontal load bearing rails.
- Pales (Intermediate Uprights)

2. 4-meter fence (Size: 2400 X 80 X 110 tapered to 80mm). Reinforced with 4 X 4mm spring steel wires. Weight: 35kg.

Distance between pales is 200mm c/c. Gap between pales are 100mm. Nine pales installed per section of 2 meters. The top of the pales is angled at 45 degrees. Pales are not pre-stressed.

- Horizontal Rails (Cross Bars)

  Size: 1980 X 75 X 150mm with 9 x 10mm diameter holes. Reinforced with 4 X 4mm spring steel wires. Weight: 49kg. Cross bars are not pre-stressed

- Nuts, Bolts & Washers

  18 of 160mm long 8mm diameter high tensile steel carriage bolts are used per 2meter section. Galvanised and electro-galvanised fixing bolts are available optionally extra. All bolts used for the erection have their ends burred over.

PZ 2 PAINTING

All applications and color shall be coded to SABS1091

Outside walls of building	Micatex or Equivalent (Clifton) BBO308
Inside walls of building	Gloss Enamel (Tapioca) or equivalent G377
Window and door frames	Gloss Enamel (Brilliant white) NY1
Pipe work	Color code to SABS1091
Pumps	Color code to SABS1091
Lifting Beam	Gloss Enamel (Golden Yellow) B49
Stanchions	Gloss Enamel (Black) G2
Handrail uprights	Gloss Enamel (Black) G2
Handrail bottom horizontal	Gloss Enamel (Black) G2
Handrail top horizontal	Gloss Enamel (Golden Yellow) B49
Electrical equipment	
Pipes and guards	Gloss Enamel (Light orange) B26
Sump pump drainage pipe	Gloss Enamel (Black) G2
Access steps	Gloss Enamel (Black) (Golden yellow edge)
Entrance Door	Gloss Enamel (Light Brown) G397
Drainpipes	Gloss Enamel (Light Brown) G397
Ventilation ducting	Gloss Enamel (Mines gray) G15
Direction arrows	Gloss Enamel Black on white, white on any other color
Floors Green floor paint	
Danger Areas Gloss Enamel (Signal red) A11 (G7)	
Demarcation lines	Gloss Enamel (Golden Yellow) B49

1. Paint Selection.

a) Paint Quality: Paint shall be of the best quality, of approved manufacture and brand and comply with the relevant SABS or BS specifications.

b) Compatibility: To avoid incompatibility between paint coats due to variations in formulation, the different coats in any one paint system shall be provided by the same manufacturer.

c) Confirmation of suitability: Contractors shall obtain confirmation from their suppliers that, when using their paints, the systems specified are technically correct and suitable for the application and material being coated.

2. Paint Application

a) Surface Preparation: Between coats or with previously painted surfaces in good condition (Any surface cracks and missing plaster to be made good.) All traces of oils greases, soluble salts and corrosive air borne contaminants shall be thoroughly washed from the surfaces to be painted using a detergent type cleaning agent, rinsed and dried. The previous coat shall then be immediately be lightly sanded or otherwise prepared as recommended by the paint manufacturer, wipe clean, dried and painted. Solvents are not acceptable as a surface cleaning agent.

b) Galvanized Surfaces: Galvanized surfaces to be painted shall be free from white rust, shall be cleaned to a drop free surface with an approved water based galvanizing cleaner, scrubbed with a bristle brush, washed with water and dried immediately prior to painting. Where necessary to obtain adhesion a light sanding with a fine abrasive paper on the surface shall be done after cleaning.

c) Painting: Paints shall be applied strictly in accordance with the manufacturer's instructions by a tradesman skilled in this class of work. Thinning of paint shall only be allowed for spray painting and the manufacturer's thinners shall be used.

d) Coating of hidden areas: Areas which will be inaccessible after erection and surfaces resting on floors shall receive the full paint system prior to erection. Mating or contact surfaces shall be prepared and primed and brought together while the paint is still wet.

e) Crevices: Crevices will not be permitted. Where unavoidable crevices are accepted by the Engineer, such crevices shall be filled with compatible filler after application of the priming coat.

f) Protection of machined surfaces: Where painting of machined surfaces is not possible or advisable, these surfaces shall be coated with an approved proprietary anti-corrosion compound giving 12 months protection under normal operating conditions. Shaft ends and machined mating or mounting surfaces or pads shall be so coated and shall not be painted.

g) Protection on site: Proper and adequate use of cover sheets and other means shall be made to protect the existing paint work from damage and from metal dust and sparks when welding, grinding and wire brushing on site. Similarly, effective steps shall be taken to prevent spillage or splashing of other damage to floors, walls and equipment when painting on site and any damage or mess caused shall be corrected at the Contractors cost.

h) Final coat: The final external coat/s shall always be applied on site after installation. A professional smooth finish with uniform color is required.

i) Floors: All floors to be degreased made good if necessary and paint with a reputable floor-cote type paint.

j) Danger Areas: Areas in front of or around distribution boards, MCC panels and fire points shall be so painted in gloss enamel on top of the floor paint to identify such areas. The area painted will be of such size as to allow sufficient access space to

the danger area for authorized personnel. The area shall be so identified by the use of demarcation lines

k) Demarcation Lines: All demarcation lines on the premises shall be uniform in color and shall be a solid yellow line 10 cm wide.

l) Gate posts, straining posts, intermediate posts, stays, standards and gate framing shall be painted before erection with two coats of approved bituminous aluminium paint. After erection any bared or damaged surfaces are to be made good to the approval of the Engineer.

PZ 3 MEASUREMENT AND PAYMENT

Measurement and payment shall be per linear metre of fencing supplied and erected complete with razor wire, straining posts, stays and standards, and for each gate supplied and erected complete, all-in accordance with the specifications

(a) 2.4m concrete palisade fencing complete…… Unit: m

(b) Sliding gate 2.4m high …… ……. Unit: No

(c) Single leaf gate 2.1m high …… …. Unit: No

NQUTHU LOCAL MUNICIPALITY

NQULM18/2023-2024: APPOINTMENT OF A CONTRACTOR THE CONSTRUCTION OF NDATSHANA COMMUNITY HALL

C4. Site Information

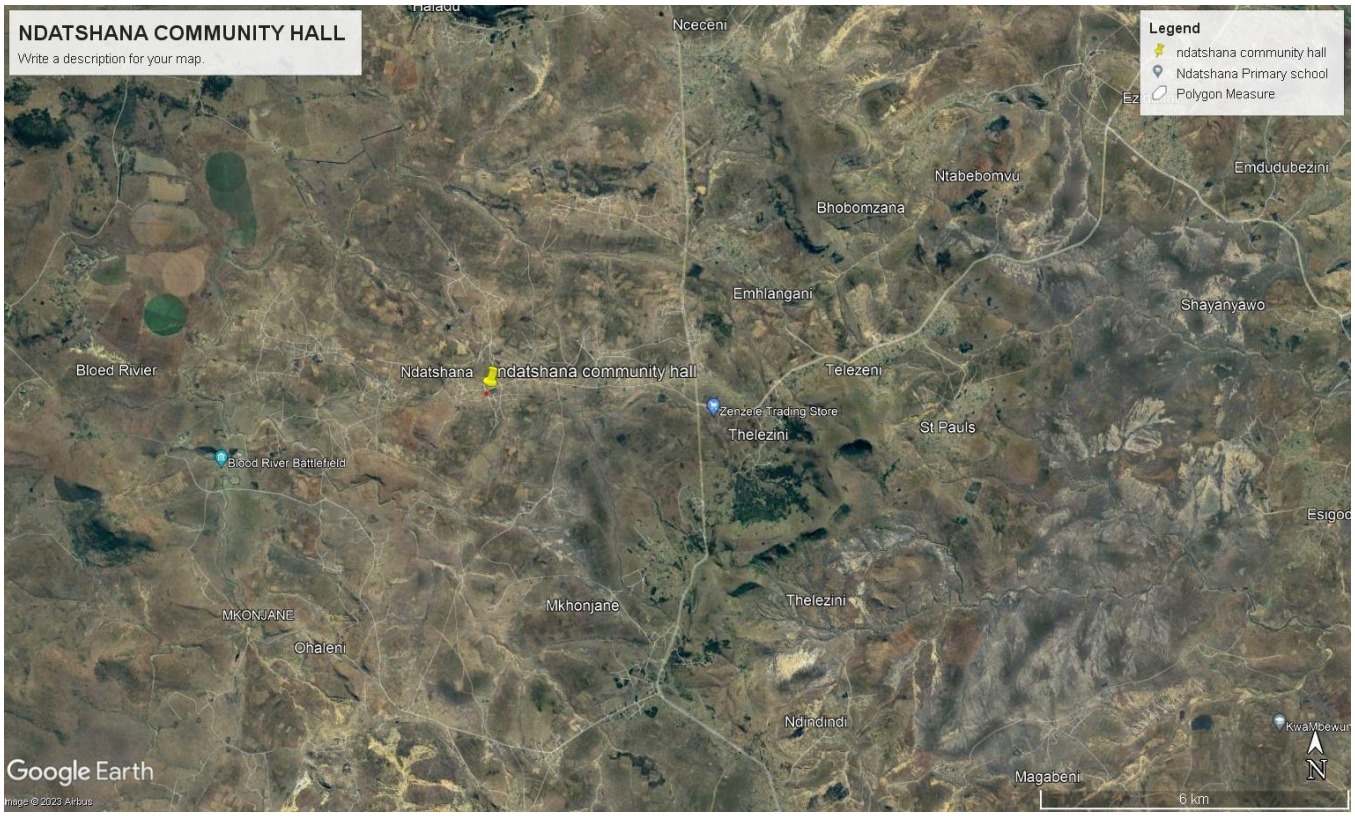
Site Inspection

The tenderer shall inform him/ herself on the nature of the site and inspect the site.

The Employer will consider a tender only if the site inspection and/or tenderer's meeting arranged by the Engineer has been attended by a representative who must:

- Be suitably qualified to comprehend the implications of the work involved and
- Be the tenderer him/herself or a person in the direct employ of the tenderer

Locality Maps for Construction of Ndatshana Community Hall



SITE CO ORDINATES (BOOSTER PUMP STATION) (28° 5'40.43"S, 30°35'43.14"E)

ANNEXURE E

4. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall apply to this contract and the Employer undertakes that the only variations from the General Conditions of Contract are as follows:

SCC 1 Clause 1(1)(1) **"Employer "**means **NQUTHU LOCAL MUNICIPALITY** Herein represented by their Nominee.

SCC 2 Clause 1(1) m **"Engineer"** means the Employer's representative.

SCC 3 Clause 14 **Survey References**

The following sub-clause is added at the end of Clause 14(3) and is numbered 14(4): "The Contractor shall take adequate precautions to preserve any permanent beacons such as erf boundary pegs, reference marks and bench marks which may be present on or in the vicinity on the site, irrespective of whether any such beacon may have been placed before or during the construction period. "Should any such beacon be distributed by any act or omission on the part of the Contractor or any officer, servant, agent or invitee of the Contractor then the Contractor shall arrange for the displaced beacon to be replaced by a registered land surveyor within such limits of time as the Engineer may prescribe and all costs, charges and expenses arising from such replacement shall be borne by the Contractor.
"Survey diagrams relating to the replacement of beacons in the circumstances described in the previous paragraph shall be submitted by the land surveyor concerned to the Director for Works of the Mpumalanga Department of Works for approval. IN this regard, attention is drawn to Clause 35(1) of the Survey Act No. 9 of 1927 (as amended)."

SCC 4 Clause (1) **Drawings and Documents**

The following shall be added to this Sub-Clause:
Upon receipt of the final payment in respect of the Contract, the Contractor shall forthwith return to the Employer's name. "None of the documents herein before mentioned shall be used by either of the parties hereto for any purpose other than the performance of their respective obligations under the Contractor. "Drawings supplied to the Contractor by the Employer or Engineer, or supplied by the Contractor and approved of by the Engineer or Employer shall not be departed from without the written instructions of the Engineer or Employer. "All dimensions will be figures on the drawings and are to be considered correct even if not to scale. No dimension shall be obtained by scaling."

SCC 5 Clause 24 **Competent employees**

Add the following:

Approved on-site training of the labour force by the Contractor will be required for all facets of the construction work involved under this contract.

SCC 6 Clause 16(2) **Contractor's copies**

The Contractor will be issued free of charge two sets of paper prints of all drawings, one copy of the tender document and one copy of the signed contract document. Additional copies will be to the Contractor's account.

SCC7 Clause 38(7) **Workmen's compensation**

Amend Clause 38(7) as follows:

The Contractor shall provide proof, that he has paid all contributions required in terms of the provisions of the Workmen's Compensation Act (Act No 30 of 1941, as amended), within 28 days of the Commencement Date.

SCC 8 Clause 45(2) **Extension of Time for Completion**

Where the Engineer grants the Contractor extension of time for the completion of the Works the Contractor shall not be entitled to any additional payment for items included under Quantities in respect of such extension of time. This provision shall, however, not prejudice any claim under Clause 51 of the Conditions of Contract.

SCC 8(b) Shortage of Materials

The Tenderer shall ascertain that materials on which his tender based will be available on a continuous basis for the execution of the contract. No additional remuneration or extension of time will be granted should it become necessary to obtain material from other sources.

SCC 9 Clause 49(2) **Application of Contract Price Adjustment**

These clauses shall be deleted in total. Allowances for escalation must be made in the rates tendered for the items stated in the Schedule of Quantities, ie rates shall remain fixed for the full contract period.

SCC 10 Clause 52(2) **Valuation of Material Brought onto site**

Add the following:

Payment for materials on site will only be made for those materials which are physically on site, for which proof of ownership by the Contractor is given an for which ownership has been ceded to the Employer.

The Contractor shall remain responsible for the materials and shall insure them against all risks until such time as they are used or built into the works and taken over by the Employer.

Drawings