



DR JS MOROKA LOCAL MUNICIPALITY

CONTRACT NUMBER: BID NO: JSM-W21/20-21/W23

TENDER DOCUMENT

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION

PREPARED BY:	PREPARED FOR:
HWA Engineers and Project Managers 24A Rissik Street POLOKWANE 0700 Tel: 015 297 5906 Fax: (086) 246 0744 Email: admin@hwaeng.co.za	 EXPANDED PUBLIC WORKS PROGRAMME Creating opportunities towards human fulfilment The Municipal Manager Dr. JS Moroka Local Municipality P/Bag X 4012 SIYABUSWA 0472 Tel: (013) 973 9126/7/8/9 Fax: (013) 973 9132/3

NAME OF BIDDER (BIDDING ENTITY) (FULL NAME, i.e. (CC, (PTY) LTD, LTD, JV, SOLE PROPRIETOR etc.)

:

TEL NUMBER

:

FAX NUMBER

:

CIDB NO.

:

FAX NUMBER

:

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

R.....(In figures)



VERY IMPORTANT NOTICE ON DISQUALIFICATIONS:

A bid not complying with the peremptory requirements stated hereunder will be regarded as not being an "Acceptable bid", and as such will be rejected.

"Acceptable bid" means any bid which, in all respects, complies with the conditions of bid and specifications as set out in the bid documents, including conditions as specified in the Preferential Procurement Policy Framework Act (Act 5 of 2000) and related legislation as published in Government Gazette number 22549, dated 10 August 2001, in terms of which provision is made for this policy.

1. If a tax clearance certificate or copy thereof (or in the case of a joint venture, of all the partners in the joint venture) has not been submitted with the bid document on closing date of the bid.
2. If any pages have been removed from the bid document, and have therefore not been submitted, or a copy of the original bid document has been submitted.
3. Failure to complete the schedule of quantities as required, i.e. only lump sums provided.
4. Scratching out, writing over or painting out rates, without initialling next to the amended rates or information, affecting the evaluation of the bid.
5. The use of correction fluid (i.e. tippex) or any erasable ink, e.g. pencil.
6. Non-attendance of mandatory/compulsory (If Applicable):
 - o Site inspections or;
 - o Information/Clarification meetings
7. The Bid has not been properly signed by a party having the authority to do so, according to the example of "Authority for Signatory"
8. No authority for signatory submitted – See example, where it is stated that a duly signed and dated original or certified copy of the company's relevant resolution (for each specific bid) of their members or their board of directors, must be submitted.
9. Particulars required in respect of the bid have not been completed, except if information required on Preferencing Schedule in respect of HDI Equity and Equity Ownership Forms, is not completed, the bid will not be disqualified but no preference points will be awarded.
10. The bidder attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract
11. The bid has been submitted either in the wrong bid box or after the relevant closing date and time
12. Failure to provide a valid certificate from the Department of Labour, or a declaration (Specific goals – "Equity ownership") by a designated employer that it complies with the Employment Equity Act 55 of 1998.
13. If any municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three months. In a case of lease, Leaser's municipal rates and taxes are applicable.
14. If any bidder who during the last five years has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.
15. The accounting officer must ensure that irrespective of the procurement process followed, no award may be given to a person –
 - (a) who is in the service of the state, or;
 - (b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder, is a person in the service of the state; or;
 - (c) who is an advisor or consultant contracted with the municipality in respect of contract that would cause a conflict of interest?
16. Failure to provide:
 - (a) written proof of **registration** with the CIDB, in an appropriate contractor grading designation (category), as required in the bid documentation (if applicable); or
 - (b) written proof of **application** to the CIDB **for registration** as a contractor in an appropriate designation (category), as required in the bid documentation (if applicable).
17. Bid offers will be rejected if the bidder or any of his directors is listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
18. Bid offers will be rejected if the bidder has abused DR. JSMLM Supply Chain Management System.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

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Witness:



19. Failure to attach a copy of a valid signed Joint Venture/Consortium agreement (if applicable) to the bid document.
20. Form of offer not completed and signed by the authorised signatory.
21. Not signing all pages on the space provided
22. Attach CV of Contracts Manager, Site Agent and Safety Officer
23. Certified Qualification of Contracts Manager (Minimum qualification in Civil / Water related projects), Site Agent and Safety Officer (Relevant Certificate)
24. Proof Of Foreign Qualification approved from SAQA (if applicable)
25. Proof of Employment, letter confirming employment (Contracts Manager, Site Agent and Safety Officer)
26. Proof of relevant experience (copies of appointment letters and respective completion certificates)
27. Proof of Purchase of the tender document must be attached; failure to do that will lead to disqualification (Not applicable when e-tender services used as per the Advert)
28. A letter from the accounting officer (in case of a close cooperation or cooperative) or accounting firm (in case of a Private company, stating that the business is going concern.
29. In case where the bidder fails to prove beyond reasonable doubt that the project will be completed with the amount stated on the form offer. The bidder in the latter case will be given an opportunity to present the facts for risk mitigation purposes.
30. The municipality also reserves the right not to appoint the lowest bidder and to appoint the bid in whole or in parts. The municipality also reserves the right to appoint the bid based on its risk assessment

NOTE:

IN THIS DOCUMENT AND OTHER DOCUMENTS REFERRED TO BUT NOT ATTACHED, THE FOLLOWING WORDS ARE SYNONYMOUS WITH EACH OTHER.

1. CLIENT, EMPLOYER, DR. JS MOROKA LOCAL MUNICIPALITY (DR. JSMLM).
2. BID, TENDER AND VARIATIONS THEREOF
3. JOINT VENTURE / CONSORTIUM

BIDDER:

DR. JSMLM:

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Initial: DJSM

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Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION

SUMMARY FOR BID OPENING PURPOSES

NAME OF BIDDING ENTITY:

.....

PHYSICAL STREET ADDRESS:	POSTAL ADDRESS:

TELEPHONE NUMBER :

FAX NUMBER :

E-mail ADDRESS :

CONTRACT PRICE : R

(Amount brought forward from the Form of Offer and Acceptance)*

.....
 Signed by authorised representative of the Bidding Entity

.....
 DATE

- Should any discrepancy occur between this figure and that stated in the Form of Offer and Acceptance, the latter shall take precedence and apply.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

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Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION

NB This list of contents indicates the standard sequence for the various parts of the Bid.

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Witness:		



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

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Witness:		



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DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

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FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION

PART T1	BIDDING PROCEDURES	PAGE(S)
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DR. JSMLM:

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Witness:



T1.1 BID NOTICE AND INVITATION TO BID



DR JS MOROKA MUNICIPALITY

INVITATION TO CONTRACTORS

Tenders are hereby invited from Contractors with necessary experience and compliance documents, have an active **CIDB grading of a minimum 5CE/4CE PE** and are in good standing with the South African Revenue Services for the **CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION**.

Tender documents will only be available from **11 AUGUST 2021** on the E-Tender. Hardcopy tender documents may be obtained from Dr JS Moroka Municipal Head Quarters at the cashier offices situated 2601/3 Bongimfundo Street, Siyabuswa during working hours 09h00 to 15h00 (Monday to Friday), upon payment of a non-refundable fee of **R750 per document**. Only cash or bank guaranteed cheques will be accepted and cheques are to be made payable to Dr JS Moroka Municipality. No tender documents will be sold beyond these times.

Bidders should note that the Municipality must adhere to Covid-19 regulations of the Disaster Management Act in avoiding gatherings including tender briefings and site inspections. Enquiries will be addressed electronically. Bidders are encouraged to forward their enquiries at least two weeks before the closing tenders to allow correspondence in time.

All tenders and supporting documents shall be sealed in an envelope or package clearly marked **“Contract JSM-W21/20-21/W23 for the CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION**.

Duly completed tenders shall be placed in the tender box situated at the main entrance of Dr JS Moroka Local Municipality at 2601/3 Bongimfundo Street, Siyabuswa. No Fax or Late tenders will be accepted. Tenders will be evaluated on a 80/20-point system in terms of Dr JS Moroka Municipality's Supply Chain Management Policy in line with Preferential Procurement Framework Act 5 of 2000. Tenders shall be deemed to have acquainted themselves with tender rules included in the tender document. Tender offers shall be valid for a period of 90 days from the closing date.

All Technical enquiries are to be directed to Mr G Mtau at (013) 973 9126/7/8/9 while document procurement related enquiries are to be directed to Mr. BS Mokgotle at (013) 973 1101 from 07H45 to 16H15 Monday to Friday.

In all cases Tenders shall reach the stipulated address not later than 11h00 on 25 August 2021 when tenders shall be opened and read in public.

Mr B.M Mhlanga
Acting Municipal Manager

BIDDER:

DR. JSMLM:

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Witness:



T1.2 BID DATA

The **Standard Conditions of Bid** for Procurements makes 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.

Clause number	Data
F.1.1 ACTIONS	The Employer is: The Municipal Manager Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa 0472
F.1.2 TENDER DOCUMENTS	The bid documents issued by the Employer comprise: THE BID Part T1 Bidding procedures Part T1.1 Bid notice and invitation to bid Part T1.2 Bid data Part T2 Returnable documents Part T2.1 List of returnable documents Part T2.2 Returnable schedules THE CONTRACT Part C1 Agreements and contract data C1.1 Form of offer and acceptance C1.2 Contract data C1.3 Form of Guarantee C1.4 Agreement in terms of Occupational Health and Safety Act, 1993 Part C2 Pricing Data C2.1 Pricing Instructions C2.2 Bill of Quantity Part C3 Scope of Works C3 Scope of Works Part C4 Site Information C4 Site Information
F.1.4 COMMUNICATION AND EMPLOYER'S AGENT	(Compiler: HWA Engineers and Project Managers The Employer's agent is: Name: Mr F Mazengura Address: 24A Rissik Street ,Polokwane Tel: 015-297-5906 E-mail: admin@hwaeng.co.za

BIDDER:

DR. JSMLM:

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Witness:



Clause number	Data
F.2.1 ELIGIBILITY	Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a 5CE/4CE PE class of construction work, are eligible to have their tenders evaluated. Joint Ventures are eligible to submit tenders provided that: 1. Every member of the joint venture is registered with the CIDB; 2. The lead partner has a contractor grading designation in the 5CE/4CE PE class of construction work; and 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a or 5CE/4CE PE class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. Accept that only those tenderers with a bank rating of not less than a "C" can be considered for evaluation.
F.2.7 CLARIFICATION MEETING	Tender briefing and site inspection suspended due to the outbreak of Covid-19.
F.2.13.2 SUBMITTING A TENDER OFFER	Each tenderer is required to return the complete set of documents as listed in the Tender data with all the required information supplied and completed in all respects.
F.2.13.3 SUBMITTING A TENDER OFFER	The <u>whole original</u> bid document, <i>as issued by the DR. JSMLM</i>, shall be submitted. <i>No copies will be accepted.</i> Bids may only be submitted on the Bid documentation issued by the DR. JSMLM.
F.2.13.5 SUBMITTING A TENDER OFFER	The Employer's address for delivery of bid offers and identification details to be shown on each bid offer package are: Location of bid box: Main Gate Physical address: Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa 0472 Identification details: Contract Number: JSM-W21/20-21/W23 (CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.)
F.2.15 CLOSING TIME	The closing time for submission of bid offers is: 11h00, 25 August 2021. Telephonic, telegraphic, telex, facsimile or e-mailed bid offers will not be accepted.
F.2.16 TENDER OFFER VALIDITY	The bid offer validity period is 90 days

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DR. JSMLM:

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Clause number	Data

Clause number	Data
F.2.18 PROVIDE OTHER MATERIAL	The bidder shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements
F.2.19 INSPECTIONS, TESTS AND ANALYSIS	Access must be provided for the inspection of the tenderer's offices if required.
F.2.23 CERTIFICATES	The bidder is required to submit with his bid . (1) a copy of the valid Certificate of Contractor Registration issued by the Construction Industry Development Board in terms of the Construction Industry Development Board Act (Form F006); and (2) an original Tax Clearance Certificate, issued by the South African Revenue Services (3) a copy of the valid Certificate of Competency for Contractor's Safety Officer in terms of OH/S Act (85/1993) section 16(2)
F3.4 OPENING OF BID SUBMISSIONS	The time and location for opening of the bid offers are: Immediately after the closing time for submission of bid. Location: Dr. JS Moroka Local Municipality 2601/3 Bongimfundo Street Private Bag X4012 Siyabuswa, 0472
F.3.5 TWO-ENVELOPE SYSTEM	A two-envelope procedure will not be followed.
F.3.9 3.9.1 ARITHMETICAL ERRORS	Replace the contents of the clause with the following: "Check responsive tender offers for arithmetical errors, correcting them in the following manner: a) Where there is a discrepancy between the amounts in figures and in words, the amount in figures shall govern. b) If bills of quantities (or schedule 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, <u>the rate shall govern and the line item total shall be corrected</u> . c) Where there is an error in the total of the prices either as a result of corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall be adjusted to reflect the arithmetically correct summation of corrected line item totals.
3.9.2	Consider the rejection of a tender offer if the tenderer does not accept the correction of the arithmetical errors in the manner described above."
F.3.11 EVALUATION OF BID OFFERS	The preference procedure for evaluation of responsive bid offers shall be the 80/20 -point preference system, in full compliance with Form 2.3.3. Technical and general criteria will be evaluated in terms of paragraph 2.3.3.10

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Clause number	Data
F.3.13.1 ACCEPTANCE OF BID OFFER	Bids containing any one or more of the errors or omissions, or bids not having complied with any one of the peremptory bid conditions as detailed on page 2 of this bid document, shall not be considered and shall automatically be rejected.

Clause number	Data
F.3.18 PROVIDE COPIES OF THE CONTRACTS	The number of paper copies of the signed contract to be provided by the Employer is one .
ADDITIONAL CONDITIONS APPLICABLE TO THIS BID	The additional conditions of bid are: 1 The Employer may also request that the bidder provide written evidence that his financial, labour and other resources are adequate for carrying out the contract. 2 The Employer reserves the right to appoint a firm of chartered accountants and auditors and/or execute any other financial investigations on the financial resources of any bidder. The bidder shall provide all reasonable assistance in such investigations. 3 The bidder shall be required to complete the Form of Offer and Acceptance (C1.1) and Bills of Quantity for all the region or regions for which they intend to bid for. 4 The bid document shall be submitted as a whole and shall not be taken apart. 5 List of returnable documents (PART T2) must be completed in full. (A bidder's company profile will not be used by the DR. JSMLM to complete PART T2 on behalf of the bidder) NB: If PART T2 is not completed in full by the bidder, this offer will be rejected.

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Annex F
(Normative)

Standard Conditions of Tender

- Note: 1 These Standard Conditions of Tender are identical to that contained In Annex F of SANS 294: 2004, *Construction Procurement Processes, Procedures and Methods*.
- 2 Annex E of SANS 294, *Construction Procurement Processes, Procedures and Methods*, and SAICE's Practice Manual #1, *The use of South African National Standards in Construction Procurement*, provide guidance on referencing these Standard Conditions of Tender in procurement documents.

F.1 General

F.1.1 Actions

The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. 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 Tender Documents

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

F.1.3 Interpretation

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

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

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 tenderer's financial offer after the factors of non-firm prices, all unconditional discounts and any other tendered 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 tender process; and
 - c) fraudulent practice means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- 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 tenderer 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 tenderer. The name and contact details of the employer's agent are stated in the tender data.

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

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

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The employer shall not accept or incur any liability to a tenderer 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 tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.

F.2 Tenderer's obligations

F.2.1 Eligibility

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

F.2.2 Cost of tendering

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

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting@) are stated in the tender data.

F.2.8 Seek clarification

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

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F.2.9 Insurance

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

F.2.10 Pricing the tender offer

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

F.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

F.2.10.3 Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender 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 tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

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

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit a tender 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 tender 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 Mack ink.

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender 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 tender offer where required in terms of the tender data.

The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers 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 tender offer.

F.2.13.5 Seal the original and each copy of the tender 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 tender data, as well as the tenderer's name and contact address.

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DR. JSMLM:

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F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender 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 tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender 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 tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender 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 tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Proof of posting shall not be accepted as proof of delivery. The employer shall not accept tender offers submitted by telegraph, telex, facsimile or e-mail, unless stated otherwise in the tender data.

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

F.2.16 Tender offer validity

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

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

F.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (Or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

Note: Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer 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 tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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 tender data.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



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 tender documents

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

F.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender 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 before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until seven days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

F.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened, the total of his prices, preferences claimed and time for completion, if any, for the main tender 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 tender data that a two-envelope system is to be followed, open Only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advice tenderers 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 tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Nondisclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

F.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

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

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



F.3.9 **Arithmetical errors**

F.3.9.1 Check responsive tender offers for arithmetical errors, correcting them in the following manner:

- a) Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- b) If bills of quantities (or schedule 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 be corrected and the unit rate shall govern.
- c) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

F.3.9.2 Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of his arithmetical errors in the manner described in F.3.9.1.

F.3.10 **Clarification of a tender offer**

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

F.3.11 **Evaluation of tender offers**

Evaluation Criteria

The tenders were evaluated in terms of the Municipality Supply Chain Management and Preferential Procurement Policy, which is line with the Preferential Procurement Framework Act (Act 5 of 2000). Tenders were evaluated using the 80/20 points allocation system as prescribed. The total points out of a possible maximum of 100 are calculated using the following formulae

F.3.11.1 Price

In relation to Tendered Price, the points allocated to the Tender Price will be calculated using the following formula:

$$N_p = \frac{80 * [1 - (T_s - T_m)]}{T_m}$$

Where: N_p = number of tender adjudication points awarded in relation to price

T_s = Tender Sum

T_m = Lowest Tender Sum

F.3.11.2 Preferential Procurement

Preferential procurement points will be allocated according to the tenderer's B-BBEE status level, as per the **Preferential procurement policy framework act, 2000: preferential procurement regulations, 2011**, which came into effect on the 7th of December 2011.

In order to qualify for preferential procurement points, the tenderer must attach a certified copy of its valid B-BBEE construction sector scorecard as contained in the **Codes of Good Practice on Black Economic Empowerment**, issued in terms of section 9(1) of the **Broad-Based Black Economic Empowerment Act (Act no. 53 of 2003)**.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



Points will be awarded to the tenderer for attaining the B-BBEE status level of contributor in accordance with the table below.

B-BBEE Status Level of Contributor	Number of points (80/20)
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

In the event of a Joint Venture (JV) Tender:

A Joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate tender.

PLEASE REMEMBER:

- **TO ATTACH A VALID ORIGINAL TAX CLEARANCE CERTIFICATE**
- **IN CASE OF A JOINT VENTURE, THE VALID ORIGINAL TAX CLEARANCE CERTIFICATE OF EACH PARTNER, THIS MUST BE SUBMITTED WITH THE BID DOCUMENT**

F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

F.3.13.1 Accept tender offer only if the tenderer complies with the legal requirements stated in the Tender Data.

F.3.13.2 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period. Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful tenderer as described in the form of offer and acceptance.

F.3.14 Notice to unsuccessful tenderers

After the successful tenderer has acknowledged the employer's notice Of acceptance, notify other tenderers that their tender offers have not been accepted.

F.3.15. Prepare contract documents

If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents,
- c) other revisions agreed between the employer and the successful tenderer, and
- d) the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.16 Issue final contract

Prepare and issue the final draft of contract documents to the successful tenderer for acceptance as soon as possible after the date of the employer's signing of the form of Offer and acceptance (including the schedule of deviations, if any). Only those documents that the conditions of tender require the tenderer to submit, after acceptance by the employer, shall be included.

F.3.17 Complete adjudicator's contract

Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.

F.3.18 Provide copies of the contracts

Provide to the successful tenderer the number of copies stated in the Tender Data of the signed copy of the contract as soon as possible after completion and signing of the form of offer and acceptance.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART T2 LIST OF RETURNABLE DOCUMENTS PAGE(S)

The bidder must complete the following returnable documents.

T2.1	RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES	23
T2.2	OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES	37
T2.3	RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT	47

NOTE:

Although the documents under Part T2 is headed "Returnable Documents" in line with the CIDB model, these are not the only documents to be returned together with the bid. **All** the documents indicated on Part T1, must be completed and signed where applicable and submitted as a **complete set of documents**.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



T2.1 RETURNABLE SCHEDULES REQUIRED FOR BID EVALUATION PURPOSES

CONTENTS

PAGE(S)

PART T2 LIST OF RETURNABLE DOCUMENTS

The bidder must complete the following returnable documents.

FORM 2.1.1	SCHEDULE OF EQUIPMENTS REQUIRED FOR THE CONTRACT	24
FORM 2.1.2:	SIZE OF ENTERPRISE AND CURRENT WORKLOAD.....	25
FORM 2.1.3:	STAFFING PROFILE	26
FORM 2.1.4:	PROPOSED KEY PERSONNEL	27
FORM 2.1.5:	SCHEDULE OF PREVIOUS WORK CARRIED OUT BY BIDDER.....	28
FORM 2.1.6:	FINANCIAL ABILITY TO EXECUTE THE PROJECT.....	29
FORM 2.1.7:	AUTHORITY FOR SIGNATORY	30
FORM 2.1.8:	SCHEDULE OF PROPOSED SUB CONTRACTORS.....	32
FORM 2.1.9:	FINANCIAL REFERENCES (not required if CIDB grading applies).....	33
FORM 2.1.10	DETAILS OF ALTERNATIVE BIDS SUBMITTED.....	35
FORM 2.1.11	AMENDMENTS & QUALIFICATIONS BY BIDDER.....	35
FORM 2.1.12	LABOUR-ENHANCED METHODS: PROPOSED PLANNED ACTIONS OF BIDDER RESULTING IN DEVIATIONS FROM SPECIFIED WORK.....	36

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.1

SCHEDULE OF EQUIPMENTS REQUIRED FOR THE CONTRACT

The Bidder shall state below what Equipment will be available for the work should he be awarded the Contract.

DESCRIPTION, SIZE, CAPACITY	NUMBER

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.2 SIZE OF ENTERPRISE AND CURRENT WORKLOAD

What was your turnover in the previous financial year? R_____

What is the estimated turnover for your current financial year? R_____

Physical facilities:

Provide information on offices, factories, yards and warehouses occupied by your enterprise (attach details if the space provided is not enough)

Description	Address	Area (m ²)

List your current contracts and obligations:

Description	Value (R)	Start date	Duration	Expected completed date

Do you have the capacity to supply the goods and services described in this bid, should the contract be awarded to you?

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.3 STAFFING PROFILE

Provide information on the staff that you have available to execute this contract (attach a separate list if the space provided is insufficient)

Own staff: gender and race	Number of staff
Staff to be employed for the project: gender and race	Number of staff

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.4 PROPOSED KEY PERSONNEL

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

DESIGNATION	NAME OF	NATIONALITY:	SUMMARY OF		HDI Status Yes/No	NQF 7 Certified Yes/No
	(i) NOMINEE (ii) ALTERNATE		QUALIFICA- TIONS	EXPERIENCE AND PRESENT OCCUPATION		
HEADQUARTERS Partner/director						
Project Manager						
Other key staff (give designation)						
PROJECT MONITORING Site(s) Supervisors						
Other key staff (give designation)						

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:

No points will be awarded if reference cannot be reached or if it refuses to supply information. Give at least two (2) names and telephone numbers and e-mail address per reference.

EMPLOYER (Name, tel no and fax no)	CONSULTING ENGINEER (Name, tel no and fax no)	NATURE OF WORK CARRIED OUT PREVIOUSLY	VALUE OF WORK	YEAR OF COMPLETION

Witness:



FORM 2.1.6 FINANCIAL ABILITY TO EXECUTE THE PROJECT

Provide details on the surety you will provide if the bid is awarded to you

AMOUNT

Which of the following institutions will provide surety?

- Bank registered in terms of the Bank Act 1990 (Act 94 of 1990): _____
- Insurance Company registered in terms of the Short-Term Insurance Act 1998 (Act 53 of 1998): _____
- Cash: _____

Provide the estimated cash flow on the project in terms of submissions of payment certificates or payment schedules to the Employer

Month no	Amount (VAT included)			
	a Received	B Payments made	a – b Net cash flow	Cumulative cash flow
1			D	j=d
2			E	j+e=k
3			F	k+f=l
4			G	l+g=m
5			H	m+h=n
6			Etc.	Etc.
7				
8				
9				
10				
11				
12				
Maximum negative cash flow: Take the largest negative number in the last column and write it in here → → → → → → →				

Notes:

- Value added tax to be included in all amounts
- Assume payment of certificates within 30 days of approval of certificate

From what sources will you fund the above amount (e.g. Funds internally available, bank overdraft, loan, etc)

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.7 AUTHORITY FOR SIGNATORY

All signatories, including sole proprietors, shall confirm their authority by attaching to the last page of this bid a duly signed and ***dated original or certified copy*** of the relevant resolution of their members or their board of directors, as the case may be.

An *example* for “COMPANIES / PARTNERSHIPS / CLOSE CORPORATIONS is shown below:

"By resolution of the board of directors passed on 12 February 2010, Mr M W Thomson has been duly authorised to sign all documents in connection with the Bid for Contract number 000/2010 and any Contract, which may arise there from on behalf of the Bidding Entity, namely, NMP (PTY) LTD"

SIGNED ON BEHALF OF THE BIDDING ENTITY: B.J. JONES

IN HIS CAPACITY AS: DIRECTOR / PARTNER / MEMBER

DATE: 12 February 2010

AUTHORISED PERSON'S SIGNATURE: M W Thomson

AS WITNESS: 1. M.A Ntuli

An *example* for “JOINT VENTURES” is shown below:

We, the undersigned are submitting this bid offer in Joint Venture and hereby authorize Mr. B. BROOK, authorised signatory of the company “ABCD (PTY) LTD”, acting in the capacity of lead partner, to sign all documents in connection with the bid for Contract number 000/2010 and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORIZED SIGNATORY
(Lead partner, i.e. <u>“ABCD (PTY) LTD”</u>)	P.O. Box 111 Springs 1560	Signature : Name : Designation :
Name of 2 nd Company	Address of 2 nd Company	Signature : Name : Designation :
Name of 3 rd Company	Address of 3 rd Company	Signature : Name : Designation :

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



An **example** for “**SOLE PROPRIETOR**” is shown below:

“I hereby certify that I’m the sole proprietor of the Bidding Entity, namely, “**MACADOO**” and therefore duly authorised to sign the bidding documents”

SIGNATURE OF SOLE PROPRIETOR: **M W Thomson**

IN HIS CAPACITY AS: **SOLE PROPRIETOR**

DATE: **12 February 2010**

AUTHORISED PERSON'S SIGNATURE: **M W Thomson**

AS WITNESS: **1. M A Ntuli**

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies: **1**.....

Initial: DJSM

2.....

Witness:



FORM 2.1.8 SCHEDULE OF PROPOSED SUBCONTRACTORS

Provide details on all sub-contractors you intend utilising for this contract

Type of work to be used for	a % of contract	Name of sub-contractor	b % HDI owner-ship	c = a x b Total contribution to HDI ownership
Total % of contract sub-contracted		Total contribution of HDI ownership:		

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.9 FINANCIAL REFERENCES

FINANCIAL STATEMENTS

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report.

DETAILS OF BIDDING ENTITY'S BANK

If the bidder is a Joint Venture or partnership, the information requested below is required for each member / partner.

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

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO BIDDER
Name of bank	
Contact person	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	()
Fax number	()
Account number	
Type of account, (i.e. cheque account)	

BIDDER:

DR. JSMLM:

33

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



BIDDER'S TAX DETAILS

Bidder's VAT vendor registration number:

Bidder's SARS tax reference number:

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO BIDDER
Name of bank	
Contact person	
Branch name	
Branch code	
Street address	
Postal address	
Telephone number	()
Fax number	()
Account number	
Type of account, (i.e. cheque account)	

BIDDER'S TAX DETAILS

Bidder's VAT vendor registration number:

Bidder's SARS tax reference number:

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.1.10 DETAILS OF ALTERNATIVE BIDS SUBMITTED

See condition of bid.

DESCRIPTION

FORM 2.1.11 AMENDMENTS AND QUALIFICATIONS BY BIDDER

See condition of bid

PAGE	DESCRIPTION

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



**FORM 2.1.12 LABOUR-ENHANCED METHODS: PROPOSED PLANNED ACTIONS OF BIDDER
 RESULTING IN DEVIATIONS FROM SPECIFIED WORK**

ACTIVITY OR PAY ITEM	DESCRIPTION OF PLANNED ACTION RESULTING IN DEVIATION FROM SPECIFIED WORK

Compliance with Employment Equity Act 55 of 1998

Attach a valid certificate from the Department of Labour, or a declaration (refer to "Form 2.3.5 – Specific goals") by the **designated employer**, that the employer complies with the relevant chapters of the Employment Equity Act.

Definitions in terms of the last-mentioned Act.

"designated employer" means-

- a) an employer who employs 50 or more employees;
- b) an employer who employs fewer than 50 employees, but has a total annual turnover that is equal to or above the applicable annual turnover of a small business in terms of Schedule 4 to this Act."

"Schedule 4"

TURNOVER THRESHOLD APPLICABLE TO DESIGNATED EMPLOYERS

Sector or sub sector in accordance with the Standard Industrial Classification	Total annual turnover
Agriculture	R 2,00 m
Mining and Quarrying	R 7,50 m
Manufacturing	R 10,00 m
Electricity, Gas and Water	R 10,00 m
Construction	R 5,00 m
Retail and Motor Trade and Repair Services	R 15,00 m
Wholesale Trade, Commercial Agents and Allied Services	R 25,00 m
Catering, Accommodation and other Trade	R 5,00 m
Transport, Storage and Communications	R 10,00 m
Finance and Business Services	R 10,00 m
Community, Social and Personal Services	R 5,00 m

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES:*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

T2.2 OTHER DOCUMENTS REQUIRED FOR BID EVALUATION PURPOSES

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BIDDER:

Initial: Authorized signatory/ies:1.....
2.....

Witness:

DR. JSMLM:

Initial: DJSM



FORM 2.2.1 COMPULSORY SITE INSPECTIONS / INFORMATION / CLARIFICATION MEETINGS

Where Compulsory Site Inspections and Compulsory Information, Briefing or Clarification Meetings are to be held, it shall be subject to the following conditions:

1. Necessity for Compulsory Site Inspection and Compulsory Information / Briefing / Clarification Meetings

Compulsory Inspections / Meetings must only be held where the nature of the contract is such that it requires either an inspection of a site or a briefing session. The Bid Specification Committee should indicate to the Bid Office that such a compulsory inspection or briefing is regarded as a necessity.

2. Attendance Register

An attendance register of potential bidders and the firms they represent shall be kept and signed by attendees. A copy of such Attendance Register shall immediately after the inspection/briefing be sent to the Bid Office.

3. Confirmation Notes of Inspection/Briefing Sessions

Confirmation Notes of the Compulsory Inspection or Briefing Session shall be held by or on behalf of the contact person of the Department for whom the Bid is being advertised. A copy of the notes shall be sent to each firm that was represented at the inspection/meeting as soon as possible after the inspection or meeting and before the closing date of the bid. A copy of the notes shall also be sent to the Bid Office. The relevant Department will ensure that the notes are submitted to the Bid Evaluation Committee and to the Bid Adjudication Committee.

4. Bid Documents

The bid documentation shall clearly state that where the inspection of a site or the attendance of a briefing session is compulsory, non-attendance thereof will lead to the disqualification of the bidder in question. The bid documentation shall further clearly state that if bid documents are obtained **after** the compulsory briefing session or site inspection, it will only be made available to firms that were represented at the meeting. The mere fact that a firm that was not represented at a compulsory site inspection/meeting, but nevertheless submitted to the municipality a set of bidding documents, should not be construed as creating any expectations that a bid will be considered by the Municipality.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



**FORM 2.2.1 CERTIFICATE OF BIDDER'S ATTENDANCE AT THE COMPULSORY
SITE/CLARIFICATION MEETING**

This is to certify that I, **(NAME IN PRINT)**,
representative of (Bidder)
.....
of (address)
.....
.....
Telephone number
Fax number
visited and inspected the Site / Attended Clarification Meeting on (date)
in the company of (Engineer/Engineer's Representative)

SIGNATURE OF BIDDER'S REPRESENTATIVE:

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.2.2 TAX CLEARANCE CERTIFICATE

AN ORIGINAL TAX CLEARANCE CERTIFICATE OBTAINED FROM SARS TO BE SUBMITTED WITH BID DOCUMENTS.

BIDDER:

Initial: Authorized signatory/ies:1.....

2.....

Witness:

DR. JSMLM:

Initial: DJSM



FORM 2.2.3 PROOF OF REGISTRATION WITH CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

The bidder is to affix to this page either:

- Written proof of his registration with the CIDB as a Category **5CE/4CE PE OR HIGHER**.

Or

- Written proof of his application to the CIDB for registration as a contractor in the category listed above.

Note:

1. Failure to affix such documentation as prescribed to this page shall result in this bid not being further considered for the award of the contract.
2. Should this bid be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer before the end of business, at the last working day, prior to evaluation by the Tender Evaluation Committee of the contract, then this bid will no longer be considered for the award of the contract.

BIDDER:

DR. JSMLM:

41

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.2.4 DECLARATION:

I/We, the undersigned:

- (a) *bid to supply and deliver to the DR. JS Moroka Local Municipality [hereafter "DR. JSMLM"] all or any of the supplies and to render all or any of the articles, goods, materials, services or the like described both in this and the other Schedules to this Contract;*
- (b) *agree that we will be bound by the specifications, prices, terms and conditions stipulated in those Schedules attached to this bid document, regarding delivery and execution;*
- (c) *further agree to be bound by those conditions, set out in, "PARTS T1; T2; C1; C2; C3 and C4", attached hereto, should this bid be accepted in whole or in part;*
- (d) *confirm that this bid may only be accepted by the DR. JSMLM by way of a duly authorised Letter of Acceptance;*
- (e) *declare that we are fully acquainted with the Bid document and Schedules, and the contents thereof and that we have signed the Bill of Quantities and completed the Returnable Schedules and declarations, attached hereto;*
- (f) *declare that all amendments to the bid document have been initialled by the relevant authorised person and that the document constitutes a proper contract between the DR. JSMLM and the undersigned;*
- (g) *certify that the item/s mentioned in the bid document, qualifies/qualify for the preference(s) shown.;*
- (h) *acknowledge that the information furnished is true and correct;*
- (i) *accept that in the event of the contract being awarded as a result of preference claimed in this bid document, I may be required to furnish documentary proof to the satisfaction of the DR. JSMLM that the claims are correct. If the claims are found to be inflated, the DR. JSMLM may, in addition to any other remedy it may have, recover from me all cost, losses or damages incurred or sustained by the DR. JSMLM as a result of the award of the contract and/or cancel the contract and claim any damages which the DR. JSMLM may suffer by having to make less favourable arrangements after such cancellation;*
- (j) *declare that no municipal rates and taxes or municipal service charges owed by the bidder or any of its directors to the municipality, or to any other municipality or municipal entity, are in arrears for more than three (3) months; and*
- (k) *declare that I have not failed to perform satisfactorily during the last five (5) years on a previous contract with the Municipality, Municipal entity or any other organ of state, after written notice was given to me that my performance was unsatisfactory.*

Signed at this day of 2015

Authorised Signature: _____

Name of Bidding Entity: _____

Date: _____

As witness: 1. _____

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.2.5 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 In order 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**
 If so, furnish particulars.

 - 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.

* 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.

BIDDER:

DR. JSMLM:

43

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



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, principle shareholders or stakeholders in service of the state? YES / NO

3.10.1 If so, furnish particulars.

.....

3.11 Are any spouse, child or parent of the company's directors, managers, principle 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.

SHOULD THE INFORMATION REQUIRED ON THIS FORM NOT DULY BE SUPPLIED, THIS BID WILL BE REJECTED.

.....
 Signature

.....
 Date

.....
 Position

.....
 Name of Bidding Entity

BIDDER:

DR. JSMLM:

44

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.2.6 DECLARATION FOR PROCUREMENT ABOVE R10 MILLION

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

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

1. Are you by law required to prepare annual financial statement for auditing? **YES / NO**

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

.....
.....

2. Do you have any outstanding undisputed commitments for municipal services toward a municipality or any other service provider in respect of which payment is overdue for more than 30 days? **YES / NO**

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

2.2 If yes, provide particulars.

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

3. Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?..... **YES / NO**

3.1 If yes, furnish particulars.

.....
.....

4. Will any portion of goods or services be sourced from outside the Republic and if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic? **YES / NO**

4.1 If yes, furnish particulars

.....
.....

BIDDER:

DR. JSMLM:

45

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



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

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED IN THE CONTRACT

CONTENTS	PAGE(S)
FORM 2.3.1 RECORD OF ADDENDA TO BID DOCUMENTS	48
FORM 2.3.2 CONDITIONS PERTAINING TO TARGETED PROCUREMENT	49

BIDDER:

DR. JSMLM:

47

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.3.1 RECORD OF ADDENDA TO BID DOCUMENTS

We confirm that the following communications received from the Procuring Department 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		Confirmatory notes of compulsory site/clarification meeting
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Attach additional pages if more space is required.

.....
 Signature

.....
 Date

.....
 Position

.....
 Name of Bidder

BIDDER:

DR. JSMLM:

48

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FORM 2.3.2 CONDITIONS PERTAINING TO TARGETED PROCUREMENT

- 2.3.2.1 PREAMBLE
- 2.3.2.2 DEFINITIONS
- 2.3.2.3 LEGISLATIVE BASE
- 2.3.2.4 SCOPE
- 2.3.2.5 PURPOSE
- 2.3.2.6 OBJECTIVES
- 2.3.2.7 GENERAL PRINCIPLES GOVERNING THE MUNICIPALITY IN ITS
INTERACTION WITH BIDDERS
- 2.3.2.8 ADJUDICATION OF BIDS
- 2.3.2.9 ADJUDICATION USING A POINT SYSTEM
- 2.3.2.10 IMPLEMENTATION FRAMEWORK
- 2.3.2.11 COMPLAINTS/DISQUALIFICATIONS
- 2.3.2.12 DISQUALIFICATIONS

BIDDER:

Initial: Authorized signatory/ies:1.....

2.....

Witness:

DR. JSMLM:

Initial: DJSM



DR. JS MOROKA LOCAL MUNICIPALITY

BID DOCUMENT

2.3.3 CONDITIONS PERTAINING TO TARGETED PROCUREMENT

1. EVALUATION OF TENDERS

Evaluation Criteria

Municipal Supply Chain Management Policy will be used for evaluation of Prospective Service Provider as per the approved scoring system by the specification committee.

The evaluation will be done as per Preferential Procurement Regulations, 2011 issued in terms of section 5 of PPPFA, Act No. 5 of 2000.

The Construction Firm's tender responsiveness in relation to points is therefore summarized as follows:

Organising and Staffing	25
Plant	15
Experience of Firm	40
Programme and cashflow	10
Bank Ratings	10
Sub-Total	100

A firm must obtain a minimum of 60 points out of the 100 points above to be considered for price and BBB-EE evaluation/ The functionality points shall be distributed as follows below:

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



Project Manager / Contracts Manager (Maximum points obtainable 10; minimum 2)

Name:

Evaluation Criteria	Minimum Required		Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications	NQ7-Degree in Civil or equivalent		No	5	
Academic Qualifications	Diploma in Civil or equivalent		No	4	
Academic Qualifications	Diploma in Project Management or equivalent		No	4	
			Yes		
	Matric			2	
Sub-total				5	
Experience of Team Leader in similar projects			Elimination Factor		
Involvement in comparable projects (Technical)	0		Yes	0	
	1 – 2		No	1	
	3 – 4		No	3	
	5 upwards		No	5	
Sub-total				5	
Total				10	

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



Site Agent: _____ *(Maximum Points obtainable 5, minimum 2)*

Name:

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications	Diploma in civil works or equivalent	No	2	
Academic Qualifications	No formal Education in Construction	Yes	0	
Sub-total			2	
Years of experience in similar projects	0 - 4	Yes	0	
	5 - 9	No	1	
	10 and above	No	3	
Sub-total			3	
Total			5	

Note: Should the Site Agent be the same as Contractor Manager zero points will be allocated.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



Site Foreman: (Maximum Points obtainable 5; minimum 2)

Name:

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed
Academic Qualifications (Note 10) Form L	N6 in Civil or equivalent	No	2	
Academic Qualifications	Matric	No	1	
Sub-total			2	
Years of experience after qualification	0-4	Yes	0	
	4 – 9	No	1	
	10 upwards	No	3	
Sub-total			3	
Total			5	

Note: Should the Site Foremen be the same Site Agent and Team leader zero points will be allocated

Safety Officer: (Maximum Points obtainable 5; minimum 2)

Name:

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable	Points Claimed	
Academic Qualifications	Occupational Health and Safety Certificate or equivalent (SAMTRAC)	No	2		
Sub-total			2		
Years of experience after qualification	0-5	Yes	0		
	4-9	No	1		
	10 upwards	No	3		
Sub-total			3		
Total			5		

Note: Should the Safety Officer be the same as Team leader, Site Agent, Site Foreman zero points will be allocated.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



ORGANISING AND STAFFING/PERSONNEL		
PERSONNEL	TOTAL	SCORES
Construction Manager/Team Leader	10	
Site Agent	5	
Health and Safety Officer	5	
Site Foreman	5	
TOTAL	25	

PLANT (Maximum Points obtainable 15)

It must be noted that total points of **15** are obtainable by the Construction Firm in relation to the requirements as mentioned on the table below, failure to submit evidential supporting documents is not an eliminating factor **BUT** a zero point will be scored. Letter of intent or quotation from the lessor must be attached.

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable (Own)	Points obtainable (leased)	Points Claimed
Firm's plant and equipment – Note: Proof of ownership of the firm's equipment must be attached and failure to do so will result in forfeiting the plant points	Excavator x 1	No	5	2.5	
	TLBs x1	No	5	2.5	
	Tipper Truck x1	No	2.5	1.5	
	Firm's number of BOMAC Roller x1	No	2.5	1.5	
Sub-total			15	8	
Total			15	8	

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



Programme and cashflow (Maximum Points obtainable 10)

It must be noted that total points of **10** are obtainable by the Construction Firm in relation to the requirements as mentioned on the table below, failure to submit evidential supporting documents is not an eliminating factor **BUT** a zero point will be scored.

Evaluation Criteria	Minimum Required	Elimination Factor	Points obtainable (Own)	Points Claimed
Programme and cashflow	1 Cashflow linked to milestones	No	5	
	1.1 Cashflow not linked to programme and unbalanced	No	2	
	2 Programme with sub activities showing linkages and critical path	No	5	
	2.1 Programme without sub activities and linkages	No	2	
Sub-total			10	
Total			10	

BIDDER:

Initial: Authorized signatory/ies:1.....

2.....

Witness:

DR. JSMLM:

Initial: DJSM



EXPERIENCE OF FIRM (Maximum Points obtainable 40)

Note: Company's previous completed projects

It must be noted that the experience of the firm carries a maximum of **40 points** as indicated in the table below. If proof of testimonials and appointment letters, in reference to Form E not provided, then the bidder shall obtain zero points on the experience of the firm.

Provide proof of the company's previous completed projects which is in the form appointment letters and completion certificates. Verifiable references (**appointment letters and completion certificates**) with contact details must be attached.

Similar projects are for construction of pipeline projects & sewage works only. (including vat)

Evaluation Criteria	Evaluation Criteria	Elimination Factor	Points obtainable	Points Claimed
Company experience in terms of projects of a similar scope completed (Max 4 projects) undertaken in the last 10 years.	Project of similar scope (<i>pipelines / sewage works</i>) with minimum value R0.5 to R3m-5 points each	Yes	20(max)	
	Projects of similar scope with minimum value of R3.0 to R7 m-8 points each.	Yes	32 (max)	
	Projects of similar scope with minimum value of R8m-10 points each	Yes	40 (max)	
Sub-Total			40	
TOTAL(Max)			40	

Bank Ratings – Financial Performance	
10 point – Points are allocated for the cash flow management demonstrated by the tenderer from bank rating	
Rating	Points
A	10
B	8
C	6
D	4
E	2
F	0

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



TOTAL SCORE: _____/100

The score points are distributed as follows:

80 – POINTS (FOR PRICE):

ITEM No.	DESCRIPTION	ALLOCATED POINTS
1.	Price Competitiveness	80

In relation to Tendered Price, the points allocated to the Tender Price will be calculated using the following formula:

$$N_p = \frac{80 * [1 - (T_s - T_m)]}{T_m}$$

Where: **N_p** = number of tender adjudication points awarded in relation to price
T_s = Tender Sum

20 – POINTS (FOR BBBEE):

BBBEE status Level of Contributor	Number of points (80/20)
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-Compliant contributor	0

In the event of a Joint Venture (JV) Tender:

A Joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate tender.

PLEASE REMEMBER:

- TO ATTACH A VALID ORIGINAL TAX CLEARANCE CERTIFICATE
- IN CASE OF A JOINT VENTURE, THE VALID ORIGINAL TAX CLEARANCE CERTIFICATE OF EACH PARTNER, THIS MUST BE SUBMITTED WITH THE BID DOCUMENT
- TO ATTACH A B-BBEE CERTIFICATE

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

BID DOCUMENT

DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*
FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

THE CONTRACT	PAGE(S)
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PART C2 PRICING DATA	77
PART C3 SCOPE OF WORKS	90
PART C4 SITE INFORMATION	283

BIDDER:

Initial: Authorized signatory/ies:1.....
2.....

Witness:

DR. JSMLM:

Initial: DJSM



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART C1 AGREEMENT AND CONTRACT DATA

	PAGE(S)
C1.1 FORM OF OFFER AND ACCEPTANCE	60
C1.2 CONTRACT DATA	64
C1.3 FORM OF GUARANTEE	67
C1.4 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)	73

BIDDER:

Initial: Authorized signatory/ies:1.....
2.....

Witness:

DR. JSMLM:

Initial: DJSM



C1.1 FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE (AGREEMENT)

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter a contract in respect of the following works: **CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.**

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

By the representative of the Bidder, deemed to be duly authorised, signing this apart 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.

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.

FOR THE BIDDER:

Signature(s) _____

Name(s) _____

Capacity _____

(Name and address of organisation)

Name and signature of Witness _____

Date _____

BIDDER:

DR. JSMLM:

60

Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

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 C1 to C4 above.

Deviations from and amendments to the documents listed in the Bid Data and any addenda thereto 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, which must be duly signed by the authorised representative(s) of both parties.

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 fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the 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.

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.

FOR THE CLIENT:

Signature(s) _____

Name(s) _____

Capacity _____

DR. JS MOROKA LOCAL MUNICIPALITY
(Name and address of organisation)

Name and signature of witness _____

Date _____

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the bid documents issued by the Employer prior to the bid closing date is limited to those permitted in terms of the Conditions of Bid.
2. A Bidder's covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the bid documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the bid documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract.

1	Subject _____
	Details _____
2	Subject _____
	Details _____
3	Subject _____
	Details _____
4	Subject _____
	Details _____
5	Subject _____
	Details _____
6	Subject _____
	Details _____

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the 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 change 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.

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



FOR THE BIDDER:

Signature(s) _____

Name(s) _____

Capacity _____

(Name and address of organisation)

Name and signature of Witness _____

Date _____

FOR THE EMPLOYER:

Signature(s) _____

Name(s) _____

Capacity _____

DR JS MOROKA LOCAL MUNICIPALITY
(Name and address of organisation)

Name and signature of Witness _____

Date _____

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



C1.2 CONTRACT DATA

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

The following Contract Specific Data, Variations and Additional Clauses referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract.

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

PART 1: DATA PROVIDED BY THE EMPLOYER

CONTRACT SPECIFIC DATA	
Clause	Data
1.1.1.13	The Defects liability Period is 12 months .
1.1.1.14	The time for achieving Practical Completion is 4 months .
1.1.1.15	The Name of the Employer is Dr JS Moroka Municipality
1.1.1.26	The Pricing Strategy is Re-measurement Contract.
1.2.1.2	The address of the Employer is : Physical Address : 2601/3 Bongimfundo Street Postal Address : Private bag x 4012, Siyabuswa 0472 E-mail Address : technical@moroka.gov.za Tel No : (013) 973 9126/7 Fax No : (013) 973 9312/3
1.1.1.16	The Name of the Engineer is : HWA Engineers and Project Managers
1.2.1.2	The address of the Engineer is: Physical Address : 24A Rissik Street, Polokwane 0699 E-mail Address : admin@hwaeng.co.za Tel No : 015 297 5906 Fax No : 086 246 0744
*3.1.3	The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of the General Condition of Contract ; 2015; 3rd Edition: Clause Description 6.3 Variations

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



CONTRACT SPECIFIC DATA	
Clause	Data
5.3.1	The documentation required before commencement with Works execution are : Health and Safety Plan (Refer to Clause 4.3) Initial program (Refer to Clause 5.6) Security (Refer to Clause 6.2) Insurance (Refer to Clause 8.6) All the Provisional Sums items are to subject to submission of three quotation and approval from the Municipality prior to any appointment.
5.3.2	The time to submit the documentation required before commencement with Works execution is 14 days.
5.4.2	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Site Information.
5.8.1	The non-working days are Sundays. The special non-working days are : (i) South African public holidays; (ii) The year-end break/ builder's break
5.12.2.2	Extension of time due to abnormal rainfall will be determined in accordance with the principles as set out in Annexure D to the Scope of Works: Extension of time due to abnormal rainfall.
5.13.1	The penalty for failing to complete the works is R 5 000/day.
5.16.3	The latent defect period is 10 years.
6.2.2	Additional retention in lieu of performance guarantee will not apply. The Contractor shall submit the selected security to the Employer before commencement with Works execution.
6.8.3	Price adjustments for variations in the costs of special materials are allowed.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
6.10.3	The limit of retention money is 10%.
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is Nil.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R250 000.00.
8.6.1.3	The limit of indemnity for liability insurance is R10 000 000.00.
10.5.3	The number of Adjudication Board Members to be appointed is one.
10.7.1	The determination of disputes shall be by arbitration.

BIDDER:**DR. JSMLM:**

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



PART 2: DATA PROVIDED BY THE CONTRACTOR

Clause	Data												
1.1.1.9	The name of the Contractor is :												
1.2.1.2	The address of the Contractor is : Physical address : _____ Postal address : _____ E-mail address : _____ Fax : _____												
6.2.1	The security to be provided by the Contractor shall be one of the following: <table border="1"> <thead> <tr> <th>Type of security (Value Added Tax is excluded from the Contract Sum and the value of the Works for calculating the amount of the security)</th><th>Contractor's choice. Indicate "Yes" or "No"</th></tr> </thead> <tbody> <tr> <td>Cash deposit of 10% of the Contract Sum.</td><td></td></tr> <tr> <td>Performance guarantee of 10 % of the Contract Sum.</td><td></td></tr> <tr> <td>Retention of 10% of the value of the Works.</td><td>Not applicable</td></tr> <tr> <td>Cash deposit of 5% of the Contract Sum plus retention of 5% of the value of the Works.</td><td>Not applicable</td></tr> <tr> <td>Performance guarantee of 5% of the Contract Sum plus retention of 5% of the value of the Works.</td><td>Not applicable</td></tr> </tbody> </table>	Type of security (Value Added Tax is excluded from the Contract Sum and the value of the Works for calculating the amount of the security)	Contractor's choice. Indicate "Yes" or "No"	Cash deposit of 10% of the Contract Sum.		Performance guarantee of 10 % of the Contract Sum.		Retention of 10% of the value of the Works.	Not applicable	Cash deposit of 5% of the Contract Sum plus retention of 5% of the value of the Works.	Not applicable	Performance guarantee of 5% of the Contract Sum plus retention of 5% of the value of the Works.	Not applicable
Type of security (Value Added Tax is excluded from the Contract Sum and the value of the Works for calculating the amount of the security)	Contractor's choice. Indicate "Yes" or "No"												
Cash deposit of 10% of the Contract Sum.													
Performance guarantee of 10 % of the Contract Sum.													
Retention of 10% of the value of the Works.	Not applicable												
Cash deposit of 5% of the Contract Sum plus retention of 5% of the value of the Works.	Not applicable												
Performance guarantee of 5% of the Contract Sum plus retention of 5% of the value of the Works.	Not applicable												
6.5.1.2.3	The percentage allowance to cover overhead charges is _____												
6.8.3	The variation in cost of special materials is : <table border="1"> <thead> <tr> <th>Type of special material</th><th>Unit</th><th>Rate or price</th></tr> </thead> <tbody> <tr> <td colspan="3">_____</td></tr> </tbody> </table>	Type of special material	Unit	Rate or price	_____								
Type of special material	Unit	Rate or price											

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



General Conditions of Contract for Construction Works, Second Edition, 2015

PRO FORMA

PERFORMANCE GUARANTEE

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

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: _____

Physical address: _____

"Employer" means: _____

"Contractor" means: _____

"Engineer" means: _____

"Works" means: _____

"Site" means: _____

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

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

Amount in words: _____

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

Amount in words: _____

"Expiry Date": This Guarantee shall expire upon the issue of the Completion Certificate issued by Dr J.S Moroka Local Municipality.

CONTRACT DETAILS

Engineer issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Works as defined in the Contract.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date. This Guarantee shall expire upon the issue of the Completion Certificate issued by Dr J.S Moroka Local Municipality. The Engineer and/or the Employer

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. The Guarantor hereby acknowledges that:
 - 3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3.2 its obligation under this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
 - 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
 - 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
 - 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



- this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
 9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
 10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
 11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
 12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
 13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
 14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at : _____

Date : _____

Guarantor's signatory (1) _____

Capacity _____

Guarantor's signatory (2) _____

Capacity _____

Witness signatory (1) _____

Witness signatory (2) _____

BIDDER:

DR. JSMLM:

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Initial: Authorized signatory/ies:1.....

Initial: DJSM

2.....

Witness:



General Conditions of Contract for Construction Works, Third Edition, 2015

PRO FORMA

ADJUDICATION BOARD MEMBER AGREEMENT

Please note that words in italics within brackets are items which should be stated.

This Agreement is entered into between:

Adjudication Board Member: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

Contractor: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

Employer: *(Name, physical address, postal address, e-mail address, fax number, telephone number and mobile number)*.

The Contractor and the Employer will hereinafter be collectively referred to as the Parties.

The Parties entered into a Contract for *(name of project)* which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Second Edition, 2010, must be referred to *(ad-hoc adjudication/standing adjudication)*.

The undersigned natural person has been appointed to serve as Adjudication Board Member and together with the undersigned Parties agree as follows:

1. The Adjudication Board Member accepts to perform his duties in accordance with the terms of the Contract, the General Conditions of Contract for Construction Works Adjudication Board Rules and this Agreement.
2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Engineer for the duration of the Adjudication Board proceedings.
3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.
4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.
5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No Party may call the Adjudication Board Member as a witness in any such subsequent proceedings.
6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication including time spent traveling :
- a. A monthly retainer of *(amount)* for *(number)* of months, and/or
 - b. A daily fee of *(amount)* based on a *(number)* hour day, and/or
 - c. An hourly fee of *(amount)*, and/or
 - d. A non-recurrent appointment fee of *(amount)* which shall be accounted for in the final sums payable.

8. The Adjudication Board Member's expenses incurred in adjudication work shall be reimbursed at cost.

Upon submission of an invoice for fees and expenses to the Parties, the *(Contractor/Employer*)* shall pay the full amount within 28 days of receipt of the invoice and he shall be reimbursed by the other party by half the amount so that the fees and expenses are borne equally by the Parties. Late payment of such invoice shall attract interest at prime plus 3 % points compounded monthly at the prime rate charged by the Adjudication Board Member's bank.

This Agreement is entered into by:

Contractor's signature: _____

Contractor's name: _____

Place: _____

Date: _____

Employer's signature : _____

Employer's name: _____

Place: _____

Date: _____

Adjudication Board Member's signature: _____

Adjudication Board Member's name: _____

Place: _____

Date: _____

** Delete the inapplicable party*

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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2

Witness:



C1.4 AGREEMENT IN TERMS OF THE OCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT made at _____
on this the _____ day of _____ in the year _____
between **THE DR. JS MOROKA LOCAL MUNICIPALITY**(hereinafter called "the **Employer**") of the one part,
herein represented by _____
in his capacity as _____
and

(hereinafter called "the Mandatory") of the other part, herein represented by

in his capacity as _____

WHEREAS the Employer is desirous that certain works be constructed, viz **Contract no. JSM-W21/20-21/W23**

and has accepted a Bid by the Mandatory for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1 The Mandatory shall execute the work in accordance with the Contract Documents pertaining to this Contract.
- 2 This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or Engineer requiring him to commence the execution of the Works, to either
 - (a) the date of the Final Approval Certificate issued in terms of Clause 5.16 of the General Conditions of Contract (hereinafter referred to as "the GCC"),
 - (b) the date of termination of the Contract in terms of Clauses 9 of the GCC.
- 3 The Mandatory declares himself to be conversant with the following:
 - (a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act:
 - (i) Section 8 : General duties of employers to their employees;
 - (ii) Section 9 : General duties of employers and self-employed persons to persons other than employees;
 - (iii) Section 37 : Acts or omissions by employees or mandataries, and

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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2

Witness:



- (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.
- (b) The procedures and safety rules of the Employer as pertaining to the Mandatory and to all his subcontractors.
- 4 In addition to the requirements of Clause 33 of the GCC and all relevant requirements of the above-mentioned Volume 3, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.
- 5 The Mandatory is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.
- 6 ***The Mandatory warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.***
- 7 The Mandatory undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:
 - (a) The Mandatory shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatory shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatory obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
 - (b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatory to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
 - (c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the Mandatory and/or his employees and/or his subcontractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

WITNESS 1

NAME 1
 (IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATORY:

WITNESS 1

NAME 1
 (IN CAPITALS)

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

2

Witness:



CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatory in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on _____ 20.....,
Mr/Ms _____ whose signature
appears below, has been duly authorised to sign the AGREEMENT in terms of THE
OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 of 1993) on behalf of _____

SIGNED ON BEHALF OF THE COMPANY: _____

IN HIS/HER CAPACITY AS : _____

DATE : _____

SIGNATURE OF SIGNATORY : _____

WITNESS 1

NAME 1
(IN CAPITALS)

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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2

Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *BID NO: JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART C2 PRICING DATA

	PAGE(S)
C2.1 PRICING INSTRUCTIONS	77
C2.2 BILL OF QUANTITY	80

BIDDER:

Initial: Authorized signatory/ies:1.
2

Witness:

DR. JSMLM:

Initial: DR. JSM

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C2.1 PRICING INSTRUCTIONS

- 1 The General Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.
- 2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Bidder is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill.

Clause 8 of each Standardized Specification, and the measurement and payment clause of each Particular Specification, read together with the relevant clauses of the Project Specifications, all set out which ancillary or associated activities are included in the rates for the specified operations.

- 3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis. The Bill has been drawn up generally in accordance with the latest issue of Civil Engineering Quantities. Should any requirement of the measurement and payment clause of the appropriate Standardized or Project Specification(s) be contrary to the terms of the Bill or, when relevant, to the Civil Engineering Quantities, the requirement of the appropriate Standardized, Project, or Particular Specification as the case may be, shall prevail.
- 4 Unless stated to the contrary, items are measured net in accordance with the Drawings without any allowance having been made for waste.
- 5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Bid is based.
- 6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.
- 7 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

The Bidder shall also fill in a rate against the items where the words "rate only" appear in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the bidden rates shall apply should work under these items actually be required.

Should the Bidder group a number of items together and bid one sum for such group of items, the single bidden sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM 77

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Witness:



The bidder rates, prices and sums shall, subject only to the provisions of the Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

- 8 The quantities of work as measured and accepted and certified for payment in accordance with the Conditions of Contract, and not the quantities stated in the Bill of Quantities, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment.

Ordering of materials are not to be based on the Bill of Quantities, but only on information issued for construction purposes.

- 9 For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

Unit	:	The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of work at which the Bidder bids to do the work
Amount	:	The quantity of an item multiplied by the bid rate of the (same) item
Sum	:	An amount bid for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units

- 10 The units of measurement indicated in the Bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m ²	=	square metre
m ² -pass	=	square metre-pass
ha	=	hectare
m ³	=	cubic metre
m ³ -km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilonewton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	meganewton
MN-m	=	meganewton-metre
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



NB: PLEASE STATE THE FOLLOWING:

- **ARE/IS BID PRICE/S FIRM:**

YES	NO
-----	----
- **IF THE BID PRICE(S) ARE NOT FIRM, SUPPLY THE INFORMATION REGARDING ESCALATION APPLICABLE TO THIS BID:**

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



C2.2 BILL OF QUANTITIES

CONTENTS

PAGE(S)

NB List only those Sections of the Bill used.

BILL 1	:	PRELIMINARIES AND GENERAL	81
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SUMMARY OF BILL OF QUANTITIES			88
CALCULATION OF BID SUM			89

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM 80

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Witness:

MARAPYANE BULKLINE TO NTWANE SECTION

BILL 1: PRELIMINARY AND GENERAL

SECTION 1:

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	SABS 1200 A	<u>PRELIMINARY AND GENERAL</u>				
1.1		<u>FIXED-CHARGE ITEMS</u>				
1.1.1	PSA 5.1.1	Contractual Requirements	Sum	1		
1.1.2	PSA 5.1.2	<u>Establishment facilities on site</u>				
1.1.2.1	PSA 5.1.2.1 8.3.2.2	Facilities for the Engineer				
		(a) Furnished offices Not Less Than 18m²	Sum	1		
		(b) Car Port	Sum	1		
		(c) Nameboards	No	1		
		(d) Telephone	Sum	1		
		(e) Survey Assistant	Sum	1		
		(f) Survey Equipment	Sum	1		
1.1.2.2	PSA 5.1.2.2 8.3.2.3	<u>Facilities for the contractor</u>				
		(a) Offices and Storage Sheds	Sum	1		
		(b) Workshops	Sum	1		
		(c) Laboratories	Sum	1		
		(d) Living accommodation	Sum	1		
		(e) Ablution and latrine facilities	Sum	1		
		(f) Tools and equipment	Sum	1		
		(g) Water supplies, electric power and communications	Sum	1		
		(h) Dealing with water	Sum	1		
		(i) Access	Sum	1		
1.1.3	PSA 5.1.3 8.3.4	Other fixed-charge obligations (including protection of all property entered upon)	Sum	1		
1.1.4	PSA 5.1.4 8.3.5	Removal of Contractor's and Engineer's site establishment on completion	Sum	1		
1.1.5		<u>Occupational Health and Safety</u>				
		(a) Preparation of Health and Safety Plan	Sum	1		
		(b) Health and Safety Training	Sum	1		
		(c) Personal Protective Clothing and Equipment	Sum	1		
		(d) Fences, Signs and Barricades	Sum	1		
		(e) Establishment of Safety Administration	Sum	1		
		(f) Compliance to Covid 19 risk mitigation inclusive of all facilities and PPE	Sum	1		
	1200 A	TOTAL CARRIED FORWARD				

MARAPYANE BULKLINE TO NTWANE SECTION
SECTION 1 - PRELIMINARY AND GENERAL

SECTION 1:

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		BROUGHT FORWARD				
1.2		<u>TIME-RELATED ITEMS</u>				
1.2.1	8.4.1	Contractual requirements		1		
1.2.2	PSA 5.2 8.4.3	<u>Operation and maintenance of facilities on the site for the duration of construction period except otherwise where stated</u>				
	PSA 5.2.2.1	Facilities for the Engineer				
1.2.2.1		(a) Furnished offices Not Less Than 18m²	Sum	1		
		(b) Car Port	Sum	1		
		(c) Nameboards	No	1		
		(d) Telephone	Sum	1		
		(e) Survey Assistant	Sum	1		
		(f) Survey Equipment	Sum	1		
1.2.2.2	PSA 5.2.2.2 8.4.2.3	<u>Facilities for the Contractor</u>				
		a) Offices and storage sheds	Sum	1		
		b) Workshops	Sum	1		
		c) Laboratories	Sum	1		
		d) Living accommodation	Sum	1		
		e) Ablution and latrine facilities	Sum	1		
		f) Tools and equipment	Sum	1		
		g) Water supplies, electric power and communications	Sum	1		
		h) Dealing with water	Sum	1		
		i) Access	Sum	1		
1.2.3	PSAB 5.3.7	Contractor's time-related obligations in respect of Occupational Health and Safety Act Regulations inclusive of Covid 19 Regulations.	Sum	1		
1.2.4		Contractor's time-related obligations in respect of environmental plans and specifications.	Sum	1		
1.2.5	PSA 5.2.3 8.4.3	Supervision for Duration of Construction	Sum	1		
1.2.6	PSA 5.2.4 8.4.4	Company and Head Office Overhead Costs for the Duration of the Contract	Sum	1		
1.2.7	8.4.5	Other Time-related Obligations	Sum	1		
1.3	PSA 5.3 8.5	Sums stated provisionally by the engineer:				
1.3.1	PSA 5.3.1	(a) Monthly payment of salary for the Community Liason Officer @ R6000.00	Prov Sum	1	R 24,000.00	24,000.00
	1200 A	TOTAL CARRIED FORWARD				

MARAPYANE BULKLINE TO NTWANE SECTION
SECTION 1 - PRELIMINARY AND GENERAL

SECTION 1:

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		Brought Forward				
	PSA 5.3.4	(b) Training of local labour				
		i) Generic skills	Prov Sum	1	R 20,000.00	20,000.00
		ii) Entreprenaural skills	Prov Sum	1	R 10,000.00	10,000.00
		iii) Monthly payment of salary for Students in training @ R6000.00	Prov Sum	1	R 24,000.00	24,000.00
		iv) Payment of labourers whist under training for 2 days @ 22.50 per hour per labourer	Prov Sum	1	R 24,000.00	24,000.00
	PSA 5.3.3	(c) Overheads, charges and profit on item 1.3.1 (a) and (b) above	%	102,000		
	PSA 5.3.5	(d) Monthly payment of PSC Members Seating for meetings. R140/person/seating for a maximum of 10 People.	Prov Sum	1	R 6,000.00	6,000.00
	PSA 5.3.2	(e) Overheads, changes on item (d) above	%	6,000		
1.4		Prime cost sums:				
1.4.1		(a) Additional tests required by the engineer	PC Sum	1	R 40,000.00	40,000.00
		(b) Charge required by contractor on subitem 1.4 (a) above	%	40,000		
	1200 A	TOTAL BILL 1 CARRIED TO SUMMARY				

MARAPYANE BULKLINE TO NTWANE SECTION

BILL 2: PIPELINE TO NTWANE SECTION

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.1	SABS 1200 C	<u>SITE CLEARANCE</u>				
2.1.1	PS C 3.1.1 8.2.1	Clear and grub:				
		(a) Strips for water pipeline of 2m wide	m	2,400		
2.1.2	PS C 3.1.2 8.2.2	Remove and grub large trees and tree stumps of girth:				
		(a) Over 1,0 m and up to and including 2,0 m	No	8		
2.1.3	PS C 3.1.4 8.2.5	Take down and reinstate existing fences	km	2		
2.1.4	8.2.6	Clear hedge or fence or both where not scheduled separately	m	960		
2.2	SABS 1200 DB	<u>EARTHWORKS (PIPE TRENCHES)</u>				
		<u>TRENCHES FOR WATER PIPES</u>				
2.2.1	PS DB 4.2.2 8.3.2	Excavate in all materials for double trenches, backfill, compact and dispose of surplus material:				
		(a) Pipes up to 200 mm dia for depths:				
		i) Over 1,0 m up to 1,5 m	m ³	3,600		
2.2.2	8.3.2	Extra over item 2.2.1 above for:				
		(a) Intermediate excavation	m ³	780		
		(b) Hard rock excavation	m ³	468		
		(c) Hand excavation and backfill where ordered by the engineer	m ³	100		
2.2.3	PS DB 4.2.3 8.3.3	Excavation ancillaries:				
		(a) Make up deficiency in backfill material:				
		i) From other necessary excavations on site	m ³	250		
		ii) By importation from designated borrow pits	m ³	624		
		iii) By importation from designated commercial or offsite sources selected by Contractor	m ³	374		
	PS DB 4.2.5	(b) Location of existing services:				
		(i) Supply of specialist equipment for the detection of existing services	Sum	1		
	PLI3	(ii) Excavate by hand in soft material to expose existing services "LI"	m ³	120		
		(c) Opening up and closing down of designated borrow pits	Sum	1		
2.2.3		Finishing				
2.2.3.1	PS DB 4.2.6.1	Reinstate road surfaces complete with all courses:				
		(a) Gravel on shoulders	m ³	24		
		(b) Gravel on roads	m ²	10		
		TOTAL CARRIED FORWARD				

MARAPYANE BULKLINE TO NTWANE SECTION

BILL 2: PIPELINE TO NTWANE SECTION

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		BROUGHT FORWARD				
2.3	SABS 1200 LB	<u>BEDDING (PIPES)</u> <u>BEDDING FOR WATER PIPES "LI"</u>				
2.3.1	PS LB 2.2.1 8.2.1	Provision of bedding from trench excavations: (a) Selected granular material (b) Selected fill material	m³ m³	240 360		
2.3.2	PSLB 2.2.2 8.2.2	Supply only of bedding by importation: (a) From other necessary excavations: i) Selected granular material ii) Selected fill material (b) From borrow pits: i) Selected granular material ii) Selected fill material	m³ m³ m³ m³	60 90 120 180		
	PSLB 2.2.3	(c) From commercial sources within 0.5km: i) Selected granular material ii) Selected fill material (d) Overhaul of bedding cradle and selected fill blanket i) Limited ovehaul (0.5km to 1km) ii) Long Overhaul	m³ m³ m³ m³.km	24 36 16		
2.3.3		Compaction Tests: (a) Compaction density test for each layer placed and compacted to 93% MOD AASHTO as requested by the Engineer and as specified on DWG 21005/11	No.	16		
2.4	SABS 1200 L	<u>MEDIUM PRESSURE PIPES "LI"</u>				
2.4.1	PSL 4.1.1 8.2.1	Supply, handle, lay, weld, bed, test and disinfect Grade PE100 PN 16 HDPE pipes (a) 160 mm DN	m	2,400		
2.4.2	8.2.4	Bends				
2.4.2.1		Supply, handle, lay, joint, weld, bed, test, disinfect and join to the system 160mm steel cast iron bends including all couplings where necessary: (a) 11.5° (b) 22.5° (c) 45° (d) 90°	No No No No	10 8 4 4		
		TOTAL CARRIED FORWARD				

MARAPYANE BULKLINE TO NTWANE SECTION

BILL 2: PIPELINE TO NTWANE SECTION

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		BROUGHT FORWARD				
2.4.3		Tees				
2.4.3.1		Supply, handle, lay, joint, bed, test, disinfect and join to the system pipe grade PE100 HDPE PN 16 tees including all couplings where necessary				
		a) 315mm x 160mm OD	No	1		
		(b) 150mm	No	8		
2.4.5		Valves				
2.4.5.1		Air Valves				
		(a) Supply, install class 16 Air Valve Vent-O-Mat Type as shown on dwg 21005/08 including all fittings for the following diameters:				
		i) 50 mm ND	No	1		
		ii) 80 mm ND	No	3		
2.4.5.2		Scour Valves				
		(a) Supply, install class 16 Scour Valve Type as shown on dwg 21005/09 including all fittings and isolation valves on the following pipes:				
		ii) 150 mm ND	No	2		
2.4.5.6		Flow Control Valve				
		(a) Supply, install class 16 Flow Control Valve. Type as shown on dwg 21005/07 including all fittings				
		ii) 150 mm ND	No	2		
2.4.5.7		Flow Meter				
		(a) Supply, install class 16 Flow Control Valve. Type as shown on dwg 21005/10 including all fittings				
		ii) 100 mm ND	No	1		
		ii) 150 mm ND	No	1		
2.4.5.7		Float Valve				
		(a) Supply, install class 16 Float Valve at the reservoir inlet.				
		ii) 160 mm ND	No	1		
2.4.6		Valve Chambers "LI"				
2.4.6.1		Rate to include all concreting, formwork, excavation steel reinforcement and steel manhole covers for:				
		(a) Air Valves (shown on dwg DWG 21005/08)	No	4		
		(b) Scour Valves (shown on dwg 21005/09)	No	2		
		(c) Flow Control Valves (shown on dwg 21005/7)	No	2		
		(d) Flow Meter Valve (shown on dwg 21005/10)	No	2		
		TOTAL CARRIED FORWARD				

MARAPYANE BULKLINE TO NTWANE SECTION

BILL 2: PIPELINE TO NTWANE SECTION

ITEM NO	PAYMENT REFERS TO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
		BROUGHT FORWARD				
2.4.7	8.2.8	Anchor blocks:				
		(a) Class 25 MPa/19 mm concrete (shown on dwg 21005/12)	m ³	4		
2.4.8	8.2.9	Marker posts as shown on dwg 21005/13 "LI"	No	10		
2.4.9		Survey BenchMarks	No	5		
2.5		<u>Crossings</u>				
2.5.1		<u>Road Crossings by Pipe Jacking</u>				
		(a) Municipal tarred roads as shown on DWG 21005/14	No	1		
2.6	SABS 1200GA	<u>CONCRETE SMALL WORKS "LI"</u>				
2.6.1	PSGA 8.1.3	Pipe Encasement				
2.6.1.1		(a) 25MPa concrete bedding and encasing to all diameter of pipes, including shuttering and blinding layers.	m ³	6		
2.6.2	PSGA 8.1.3	Mass Concrete				
2.6.2.2		(a) 20Mpa concrete to thrust blocks and the like, including Shattering. Excavation measured elsewhere.	m ³	4		
2.7		<u>ELEVATED TANK</u>				
2.7.1		Reseal, disinfect and test existing elevated tank, inclusive of valve repairs.	Prov Sum	1	100,000.00	R 100,000.00
2.7.2		Replacement of corroded steel pipes.	Prov Sum	1	50,000.00	R 50,000.00
2.8		<u>PIPE CONNECTIONS "LI"</u>				
2.8.1	PSL 4.2.4	Allow for connection to the existing pipeline as shown on dwg 21005/04	Sum	1		
2.8.2		Test and repair existing pipeline	Prov Sum	1	50,000.00	R 50,000.00
2.8.3		Chambers on existing pipeline to include exposing, cutting and making good.	Prov Sum	1	30,000.00	R 30,000.00
		TOTAL BILL 2 CARRIED TO SUMMARY				

BILL 1	PRELIMINARIES AND GENERAL	R
BILL 2	BULK PIPELINE TO NTWANE SECTION	R
TOTAL FOR SCHEDULE OF QUANTITIES		R

Witness:



CALCULATION OF TENDER SUM

TOTAL FOR SCHEDULE OF QUANTITIES (brought forward)	R
CONTINGENCIES The sum provided here is under the sole control of the employer and may be deducted in whole or in part	(10%) R
SUB-TOTAL	R
15% VAT	R
TOTAL TENDER SUM CARRIED FORWARD TO FORM OF OFFER	R

BIDDER: **DR. JSMLM:**
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Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *BID NO: JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART C3 SCOPE OF WORKS

CONTENTS

C3.1 DESCRIPTION OF WORKS

- C3.1.1 Employer's objectives
- C3.1.2 Overview of the Works
- C3.1.3 Extent of Works
- C3.1.4 Location of the Works
- C3.1.5 Temporary Works

C3.2 ENGINEERING

- C3.2.1 Standards and Codes of Practice
- C3.2.2 Employer's Design
- C3.2.3 Contractor's Design
- C3.2.4 Drawings

C3.3 PROCUREMENT

- C3.3.1 Preferential Procurement
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- C3.4.1 Works specifications
- C3.4.2 Site establishment
- C3.4.3 Plant & Materials
- C3.4.4 Construction equipment
- C3.4.5 Existing services
- C3.4.6 Variations and additions to SABS 1200 Standardized specifications and particular Specifications

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C3.4 MANAGEMENT OF THE WORKS

C3.4.1 Generic Specification

C3.6 HEALTH AND SAFETY

C3.7 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE ENVIRONMENTAL
MANAGEMENT PLANG

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STATUS

In the event of any discrepancy between the Scope of Works and a part or parts of the SABS 1200 Standardized Specifications, the Bill of Quantities or the Drawings, the Project Specifications shall take precedence and prevail in the Contract.

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The employers' objectives are to deliver public infrastructure using labour-intensive methods and sub-contractors where possible. The works in this contract are to be executed by using both conventional construction and labour-intensive construction methods according to the Special Public Works Programme (SPWP) as prescribed in the guidelines of the Expanded Public Works Programme (EPWP).

The following prerequisites will apply for the appointment of sub-contractors:

- All sub-contractors used will be Black Economic Empowerment (BEE) compliant.
- Sub-contractors will preferably be from the village where the Works are executed.
- Otherwise, Sub-Contractors will be from the Ward where the works are executed.
- Otherwise, sub-contractors will be from the local Regions in the proximity of the community where the Works are executed.
- Prior to site establishment, the successful tenderer will submit details of the sub-contractors to be used in the execution of the Works.

Works earmarked for Sub-contractors and Labour-Intensive construction methods will be listed in the bill of quantities to distinguish them from the conventional construction works. Labour Intensive construction methods shall be implemented using unemployed local workers who are temporarily employed in terms of the project specification. The main contractor must provide NQF2 level training to the sub-contractors.

The tenderer must provide the details of the sub-contractor he/she intends on using.

It must be noted that an established contractor, in terms of the prescribed category of the CIDB, will be appointed. Only certain components of the project, in the bill of quantities, will be executed in terms of the guidelines and requirements of the EPWP. The rates prescribed in the Government Gazette of 16th February 2007 : Regulation Gazette No 8635 Volume 500, number 29635 must be used. Sub-contractors must be paid fortnightly and the main contractor must allow for financing such payouts. Sub-contractors must be paid within 7 days from presenting invoice and failure to adhere will be penalised R1 000/day. Failure of sub-contractors

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for non-payment of his labour will be penalised at 50% of his payment by the main contractor. Contractor must provide accommodation for supervisory staff and the establishment and re-establishment of sub-contractors. Contractor must enter market-related rates.

The contractor must familiarise him/her with the abovementioned requirements and price this document accordingly.

The tenderer should where possible use local sub-contractors, or alternatively those in neighbouring areas, and should also include their BEE status.

C3.1.2 OVERVIEW OF THE WORKS

The work to be carried out includes the construction of a water rising main, installation of valve chambers and associated works.

The work to be carried out under this contract includes the supply of equipment, material, and labour requirements for the successful completion of the project within the constraints of time, cost and quality.

C3.1.3 EXTENT OF WORKS

The Works to be carried out by the Contractor under this Contract comprise mainly the following:

- (a) Construction of a 160mm dia. HDPE rising main 2400m in length to an existing 200kl elevated tank.
- (b) Construction of flow control valves, air valve, scour valve and isolation valve chambers
- (c) Cleaning, disinfection and resealing of the existing 200kl elevated tank.

Correction of defects in the Works in accordance with the requirements specified in the Contract Documents. The contractor's obligations shall also include strict compliance with any Environmental specifications and/or reports deemed to form part of this contract as well as Occupational Health and Safety requirements.

This description of the Works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this Contract.

Approximate quantities of each type of work are given in the Schedule of Quantities.

C3.1.4 LOCATION OF THE WORKS

The works are located in the Marapyane village within Dr JS Moroka Local Municipality with central coordinates of (a) Latitude: **25° 0'50.67"S** (b) Longitude **28°47'54.77"E**. The area can be accessed through R568 road.

C3.1.5 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 Contractors, statutory bodies or any

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other person who might require legitimate access to or through the site for the purpose of executing legitimate business, free and unhindered usage of such roads.

- c) Temporary water connections, Contractor's offices, storage sheds, latrines, barricading of works shall be located in an approved position and subject to the approval of all authorities concerned.
- d) Safety and Security of the Contractors' temporary works shall be at the Contractors' discretion.

C3.2 ENGINEERING

C3.2.1 STANDARDS AND CODES OF PRACTICE

The following design standards for civil engineering infrastructure will apply:

- i) *Technical Guidelines (2004)* by the Department of water and Sanitation.
- ii) *General Conditions of Contract for Construction Works (2015) (Third Edition)* by the South African Institution of Civil Engineers.
- iii) *Guideline for Human Settlement planning and design (2000)* compiled under the patronage of the Department of Housing and published by the CSIR Building and Construction Technology (New Red Book).
- iv) *SABS 1200 Standardised specifications.*

C3.2.2 CONTRACTOR'S DESIGN

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

C3.2.3 DRAWINGS

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

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

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

The Drawings prepared by the Employer for the permanent Works are listed and bound in a separate volume/bound at the back of this volume⁽¹⁾. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

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PLAN No.:	DESCRIPTION	REFERENCE No.:
000	LIST OF DRAWINGS	21005-00
001	NAME BOARD	21005-01
002	LOCALITY PLAN	21005-02
003	OVERALL LAYOUT	21005-03
004	SITE LAYOUT	21005-04
005	BULK PIPELINE OFFTAKE TO NTWANE LONGITUDINAL SECTION	21005-05
006	FLOW CONTROL VALVE CHAMBER DETAILS 315mm ND	21005-06
007	FLOW CONTROL VALVE CHAMBER DETAILS 160mm ND	21005-07
008	AIR VALVE CHAMBER DETAILS	21005-08
009	SCOUR VALVE CHAMBER DETAILS	21005-09
010	BULK WATER METER CHAMBER	21005-10
011	PIPE BEDDING DETAILS	21005-011
012	THRUST BLOCK DETAILS	21005-012
013	PIPEMARKER DETAILS	21005-013
014	ROAD CROSSING DETAILS	21005-014

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C3.3 PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT

C3.3.1.1 Requirements

The Employer will only appoint one Contractor as per the procurement procedures detailed elsewhere in this document.

C3.3.1.2 Resource standard pertaining to targeted procurement

The targeted procurement standards applicable to the contract and all data, variations and definitions are detailed elsewhere in this document.

C3.3.2 SUBCONTRACTING

C3.3.2.1 Scope of mandatory subcontract works

- All sub-contractors used will be Black Economic Empowerment (BEE) compliant.
- Sub-contractors will preferably be from the village where the works are executed.
- Otherwise, Sub-Contractors will be from the Ward where the works are executed.
- Otherwise, sub-contractors will be from local regions in the proximity of the community where the Works are executed.
- Prior to site establishment, the successful tenderer will submit details of the sub-contractors to be used in the execution of the works.

C3.3.2.2 Preferred subcontractors/suppliers

A list of available sub-contractors will be provided on request by the Dr JS Moroka Municipality.

C3.3.2.3 Subcontracting procedures

The procedures relating to the selection and appointment of subcontractors including requirements for subcontract documents will be issued on appointment of the successful tenderer.

C3.3.3 MINIMUM WAGE

C3.3.3.1 Requirements

The minimum requirements wage rate for an unskilled Labourer should be R22.50 /hour.

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C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

C3.4.1.1 Applicable SABS 1200 Standardized Specifications

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

SANS 1200 A : GENERAL (1986)
 SANS 1200 AB : ENGINEER'S OFFICE (1986)
 SANS 1200 C : SITE CLEARANCE (1980)
 SANS 1200 D : EARTHWORKS (1988)
 SANS 1200 DB : EARTHWORKS (PIPE TRENCHES) (1989)
 SANS 1200 L : MEDIUM PRESSURE PIPELINES (1989)
 SANS 1200 LB : BEDDING (1981)
 SANS 1200 GA : CONCRETE SMALL WORKS (-1982)
 PSS : PROJECT SPECIFICATIONS FOR SUBCONTRACT WORK
 PSHS GENERAL PROJECT SPECIFICATIONS FOR HEALTH & SAFETY

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

C3.4.1.2 Particular Specifications

The following Particular Specifications for work not covered by the SABS 1200 Standardized Specifications are also included hereunder:

PC : TRIMMING OF SITE
 PD : MAINTENANCE
 PE : CONTINGENCIES
 PLI : Particular Specification for Generic Labour-intensive Specification

C3.4.1.3 Variations and Additions to the SABS 1200 Standardized Specifications

Variations and additions to the following SABS 1200 Standardized Specifications listed in C3.4.1 are given in section C3.4.6.

C3.4.2 SITE ESTABLISHMENT

C3.4.2.1 Services and facilities provided by the Employer

(a) Water sources

Potable water supply available

A reticulated potable water supply is to be installed as part of the contract.

The responsible water supply authority in the area of the Site is the Dr JS Moroka Local Municipality, P/Bag X4012, Siyabuswa, 0472. Tel : 013 973 9126/7/8/9.

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Should the Contractor, in complying with his obligations in terms of subclause C3.4.2.2(b): Water, wish to utilise such water supply, he shall himself be responsible for making his own arrangements with the responsible water supply authority for the supply of all water that he may require from such reticulation network for construction purposes as well as for domestic consumption.

If so required by the responsible water supply authority, the Contractor shall further be responsible, at his own cost, for making or otherwise providing metered connections to the available services at the positions specified by the water authority, as well as for the removal of such connections on completion of the Contract.

No warranty is offered or given by the Employer that the existing available reticulated water supply will necessarily be adequate for the Contractor's purposes nor that such supply is in any way guaranteed.

All charges as may be levied by the responsible water supply authority in respect of water consumed by the Contractor shall be for the Contractor's account and payment to the Contractor in respect thereof shall, in accordance with the provisions of subclause C3.4.2.2(b), be deemed to be included in the sums bided by the Contractor for the various Preliminary and General items listed in the Schedule of Quantities, as well as in the rates bided by the Contractor for the various other items listed in the Schedule of Quantities which require the consumption of water.

The Contractor shall, when reasonably required by the Engineer, produce documentary proof that all amounts as may have become due and payable by the Contractor to the responsible water authority have been promptly paid in full.

(b) Electricity supply

Reticulated electrical supply is not available on site

The Contractor shall, in accordance with the provisions of subclause C3.4.2.2(c), and at his own cost, make all arrangements necessary for the supply and distribution of electrical power required for construction purposes as well as for use in and about his site establishment.

The Contractor shall comply with all prevailing legislation in respect of the generation and distribution of electricity and shall, when required by the Engineer, produce proof of such compliance.

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Witness:	



(c) **Excrement disposal**

No disposal systems available

No water-borne sewage or other off-site excrement disposal systems are available in the vicinity of the Site.

(d) **Area for contractor's site establishment**

Employer to make site available

A specific area in close proximity to or on the Site of the Works will be made available by the Employer to the Contractor for the Contractor's site establishment. The specific area for the Contractor's site establishment will be identified to the Contractor by the Engineer and the Contractor shall have sole use of such area, free of charge, for the duration of the Contract. The Contractor shall use this area only for the purposes of erecting his site offices, workshops, stores and other facilities required for the execution of the Contract. The Contractor shall not use the area nor allow it to be used for any purposes not directly associated with the execution of the Contract.

The Contractor shall be responsible for arranging, at his own cost, for the provision of all services he may require in the area, as well as elsewhere on the Site.

Should the Contractor deem the area made available by the Employer to be inadequate or unsuitable for the Contractor's particular needs, then the Contractor shall be at liberty to make his own arrangements with the owners of other sites which he considers are better suited to his needs; provided always that the use by the Contractor of any area other than that made available to him by the Employer shall be subject to the prior written approval of the Engineer, which approval shall not be unreasonably withheld; and provided further that the Contractor shall have no claim against the Employer in respect of any costs incurred by him, either directly or indirectly in consequence of utilising any area other than that made available to him by the Employer, and which costs exceed those costs allowed for by the Contractor in his Bid.

C3.4.2.2 Facilities provided by the Contractor

(a) **Facilities for the Engineer**

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

i). **Office accommodation**

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

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

ii). Site meeting venue

The Contractor shall provide within his own site establishment facilities, a suitably furnished office or other venue capable of comfortably accommodating a minimum of **six (6)** persons at site meetings. The Engineer shall be allowed free use of such venue for conducting any other meetings concerning the Contract at all reasonable times.

iii). Contract nameboards

The Contractor shall provide, erect and maintain *one* contract name board at such positions and locations as are directed by the Engineer, in accordance with the requirements set out in SABS 1200 AB (as amended).

The Contractor shall before order or manufacturing any such contract nameboard, obtain the Engineer's written approval in respect of all names and wording to appear on the contract nameboard.

iv). Survey equipment and assistants

- Survey equipment

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

- 1 upright reading automatic level with tripod.
- 1 metric levelling staff with protective cover bag.
- 6 ranging rods.
- 1 100 metre Stilon tape measure.
- 1 ± 2 kg hammer.

Whenever reasonably required by the Engineer, the Contractor shall, in accordance with the requirements of SABS 1200 AB (as amended), make available to the Engineer or his representative, the following additional survey equipment:

- Survey assistants

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

v). Telephone facilities

NOTE: *Where no telephones are required, or only Telkom or cell phones are required, the compiler should not delete this subclause nor should he delete subclause PSAB 4.1, but rather insert the words "nil" or "not required" in the appropriate places below.*

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The Contractor shall, in accordance with the requirements of subclauses PSAB 4.1 and PSAB 5.4 of the Project Specifications, provide on Site for the duration of the Contract, the following telephone facilities for the use of the Engineer and his Representative:

- Cellphones

Number of cellphones required: One

The Contractor shall, for the duration of the Contract, provide the telephone facilities as specified hereunder for the exclusive use of the Engineer and his staff:

- Cellphones

The Contractor shall provide *one* cell phone and associated service contracts from a reputable cellular service provider. The Contractor shall further insure the cellphones against loss or damage from whatever cause arising, and shall ensure that all cellphone accounts are promptly paid on the due dates for payment. The Contractor shall further, at his own cost, ensure the prompt repair of all cellphones provided under this clause, when reasonably required by the Engineer.

The Contractor shall, on production of an itemised statement, be reimbursed only the cost of the Engineer's cell phone calls.

- vi). 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 properly installed on the computer, and the original licence agreements and disks shall be provided to the Engineer for safekeeping:

- (a) Microsoft Windows 10
- (b) MS-Office business/ Microsoft 365
- (c) Laptop -i7;16GB RAM; 500GB; SSD or 1TB HDD

All computer equipment provided shall be kept fully serviceable at all times by the Contractor. The Contractor shall have any defective equipment repaired or replaced at his own cost within 12 hours after notification by the Engineer's staff.

The Contractor shall further provide at his own cost, all paper and black ink cartridges and other consumables reasonably required by the Engineer.

At the end of the contract the equipment shall be retained by the Municipality.

- vii). Electricity supply for the Engineer

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

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electrical current supply that may occur to any electrical plant and equipment provided by the Contractor or the Engineer.

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

viii). Site instruction book

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

ix). Housing for Engineer's Representative (Example only)

The Engineer will provide housing for the Engineer's Representative. The housing and the relevant services and local authority rates and charges shall be paid by the Contractor on the written instruction of the Engineer, from a Prime Cost Sum included in Section 1200 A of the Schedule of Quantities for this purpose.

The Contractor is entitled to a percentage of the value of each payment to the Engineer to cover his expenses in this regard. (See item PSA 8.6.)

(b) Water

The Contractor shall, at his own expense, be responsible for obtaining and distributing all water as may be required for the purposes of executing the Contract, including water for both construction purposes and domestic use, as well as for making all arrangements in connection therewith. The Contractor shall further, at his own expense, be responsible for providing all necessities for procuring, storing, transporting and applying water required for the execution of the Contract, including but not limited to all piping, valves, tanks, pumps, meters and other plant and equipment, as well as for all work and superintendence associated therewith.

The sources of all water utilised for the purposes of the Contract shall be subject to the prior approval of the Engineer, which approval shall not be unreasonably withheld.

The Contractor shall comply with all prevailing legislation in respect of drawing water from natural and other sources and shall, when required by the Engineer, produce proof of such compliance. The distribution of water shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations.

All water provided by the Contractor for construction purposes shall be clean, free from undesirable concentrations of deleterious salts and other materials and shall comply with any further relevant specifications of the Contract. The Contractor shall, whenever reasonably required by the Engineer, produce test results demonstrating such compliance. Water provided by the Contractor for human consumption shall be healthy and potable to the satisfaction of the health authorities in the area of the Site.

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No separate payment will be made to the Contractor for the obtainment, distribution and consumption of water, the costs of which will be deemed to be included in the Contractor's bidden rates.

(c) Electricity

The Contractor shall, at his own expense, be responsible for obtaining and distributing all electricity as he may require for the purposes of executing the Contract, including electricity for both construction purposes and domestic use, as well as for making all arrangements in connection therewith.

The distribution of electricity shall be carried out by the Contractor strictly in accordance with the applicable laws and regulations.

No separate payment will be made to the Contractor for the obtainment, distribution and consumption of electricity, the costs of which will be deemed to be in the Contractor's bidden rates and prices.

(d) Excrement disposal

Disposal on site allowed

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

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

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

C3.4.2.3 Permits and wayleaves

The Contractor shall be responsible to obtain all the wayleave required under this Contract. A separate payment item has been included under Section 1200 A of the Schedule of Quantities to compensate the Contractor for all his expenses to obtain the wayleave.

The wayleave to be obtained by the Contractor consists mainly of the following:

C3.4.2.4 Features requiring special attention

(a) Site maintenance

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

(b) Testing and quality control

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(I) CONTRACTOR TO ENGAGE SERVICES OF AN INDEPENDENT LABORATORY

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Engineer in deciding whether the quality of materials utilised, and workmanship achieved by the Contractor comply with the requirements of the Specifications. The foregoing shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Engineer or by the Contractor.

The Contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the Contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Engineer with copies of the results of all such testing carried out by the independent laboratory.

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" (as defined in subclause PSA 7.2) which is not under the management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

(II) ADDITIONAL TESTING REQUIRED BY THE ENGINEER

In addition to the provisions of subclause C3.4.2.5(b)(i): Contractor to engage services of an independent laboratory, the Engineer shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in subclause C3.4.2.5(b)(i), at such times and at such locations in the Works as the Engineer shall prescribe. The Contractor shall promptly and without delay arrange with the independent laboratory for carrying out all such additional testing as required by the Engineer, and copies of the test results shall be promptly submitted to the Engineer.

(III) COSTS OF TESTING

(a) Tests in terms of subclause C3.4.2.5(c)(i)

The costs of all testing carried out by the independent laboratory in accordance with the requirements of subclause C3.4.2.5(c)(i), above shall be borne by the Contractor and shall be deemed to be included in the bidded rates and prices for the respective items of work as listed in the Schedule of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out in terms of subclause C3.4.2.5(c)(i).

Where, as a result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work, it becomes necessary to carry out additional tests (eg re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

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(b) Additional tests required by the Engineer

The costs of any additional tests required by the Engineer in terms of subclause C3.4.2.5(b)(i): Additional testing required by the Engineer, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Schedule of Quantities; provided always that the costs of any such additional tests ordered by the Engineer, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

(c) **Subcontractors**

All matters pertaining to subcontractors (including Nominated Subcontractors) and the work executed by them shall be dealt with directly between the Engineer and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Engineer will not become involved.

(d) **Opening up and closing down of designated borrow pits**

Measurement and payment for opening up and closing down designated borrow pits, including removing and stockpiling overburden and restoring the Site, shall be made under item 8.3.4 of SABS 1200 D. This item applies to all borrow material required under this Contract.

The requirements of subclause 5.2.2.2 of SABS 1200 D regarding the opening up, maintenance and closing down of borrow pits shall be adhered to.

(e) **Access to properties**

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 17.1 of the Conditions of Contract.

If, as a result of restricted road reserve widths and the nature of the work, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties.

Notwithstanding the foregoing, the Contractor may, with the prior approval of the Engineer (which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven and properties to close off part of a street, road, footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration and reopens the route as punctually as possible. Where possible, such streets, roads, footpaths, and entrances shall be made safe and reopened to traffic overnight. Such closure shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs, drums and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions.

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(f) Existing residential areas

Electricity and water supply interruptions in existing residential areas shall be kept to a minimum. The Engineer's approval shall be obtained prior to such interruptions and residents shall be notified in writing at least 24 hours but not more than 48 hours in advance. Supplies shall be normalised by 16:00 on the same day.

(g) Labour-intensive competencies of supervisory and management staff

Contractor having a CIDB contractor grading designation of 6CE/PE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2015 to 30 June 2016, are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a contractor grading designation of 1CE, 2CE, 3CE and 4CE shall have personally completed, or for the period 1 April 2015 to 30 June 2016 be registered on a skills programme for the NQF level 2. All other site supervisory staff in the employ of such contractors must have completed, or for the period 1 April 2015 to 30 June 2016 be registered on a skills programme, for the NQF level 2-unit standards or NQF level 4-unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour-intensive Construction systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour-intensive Construction Methods to Construct and Maintain Drainage	one of these 3-unit standards be used
		Use Labour -intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-intensive Construction methods to Construct, Repair and Maintain Structures	
Foreman / supervisor	4	Implement Labour-intensive Construction systems and Techniques	This unit standard must be completed, and
		Use Labour-intensive Construction Methods to Construct and Maintain Drainage	any one of these 3-unit standards be used
		Use Labour-intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain Structures	

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Personnel	NQF level	Unit standard titles	Skills programme description
Site Agent / Manager (ie the contractor's most senior representative who is resident on the site)	5	Manage Labour-intensive Construction Processes	Skills Programme against this single unit standard

(h) Employment of unskilled and semi-skilled workers in labour-intensive works

(i) REQUIREMENTS FOR THE SOURCING AND ENGAGEMENT OF LABOUR

- (1) Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.
- (2) The rate of pay set for the SPWP is R 116.00 per task or per day.

Note to Compiler: Insert value determined by public body in accordance with clause 2.2 of the Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP), which is repeated here for ease of use.

"In accordance with the Code of Good Practice for Employment and Conditions of Work for Special Public Works Programmes (clause 10.4), the public body must set a rate of pay (task-rate) for workers to be employed on the labour-intensive projects.

Clause 10.4 requires that the following should be considered when setting rates of pay for workers:

10.4.1 The rate set should take into account wages paid for comparable unskilled work in the local area per sector, if necessary.

10.4.2 The rate should be an appropriate wage to offer an incentive for work, to reward effort provided and to ensure a reasonable quality of work. It should not be more than the average local rate to ensure people are not recruited away from other employment and jobs with longer-term prospects.

10.4.3 Men, women, disabled persons and the aged must receive the same pay for work of equal value."

- (3) Tasks established by the contractor must be such that:
 - (aa) the average worker completes 5 tasks per week in 40 hours or less; and
 - (bb) the weakest worker completes 5 tasks per week in 55 hours or less.
- (4) The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.
- (5) The Contractor shall, through all available community structures, inform the local community of the labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and/or who come from households:

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- (aa) where the head of the household has less than a primary school education;
- (bb) that have less than one full-time person earning an income;
- (cc) where subsistence agriculture is the source of income;
- (dd) those who are not in receipt of any social security pension income.

(II) SPECIFIC PROVISIONS PERTAINING TO SANS 1914-5

(1) **Definition**

Targeted labour: Unemployed persons who are employed as local labour on the project.

(2) **Contract participation goals**

- (aa) There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- (bb) The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task-rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

(3) **Terms and conditions for the engagement of targeted labour**

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

(4) **Variations to SANS 1914-5**

- (aa) The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value-added tax or sales tax which the law requires the employer to pay the contractor.
- (bb) The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

(III) TRAINING OF TARGETED LABOUR

- (1) The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.
- (2) The cost of the formal training of targeted labour, will be funded by the provincial office of the Department of Labour. This training will take place as close to the project site as practically possible. The Contractor must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of

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persons that will undergo training and when such training is required. The Employer must be furnished with a copy of this request.

- (3) A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works – Cinderella Makunike, Fax: 012 328 6820 or email cinderella.makunike@dpw.gov.za, Tel: 083 677 4026.
- (4) The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he/she is employed for 4 months or more.
- (5) The Contractor shall do nothing to dissuade targeted labour from participating in training programmes.
- (6) An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of 1.3.4 above.
- (7) Proof of compliance with the requirements of 1.3.2 to 1.3.6 must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

(i) Local Labour and Training

The Bidder shall limit the utilisation of his permanently employed personnel to Key Personnel, such as Bids Managers, Site Agents, Foremen, Supervisors, Plant Operators, Materials and Survey Technicians, Trainers, Buyers, Storemen and the like should such expertise not be available out of the community. All other personnel and labourers shall be recruited locally.

The Bidder shall make maximum use of the human resources existing in the local community. The bidders shall apply to the employment labour desk, conveyed by the Steering Committee for details of those labourers who are available in the area of work and he shall provide preference to those labourers identified by the Steering Committee.

Formal structured skills training of labour in certain fields have been done. The bidder shall utilise trained labour in all instances. The employment of labour from outside the local area will only be considered and permitted by the Engineer in the event of:

- a) the unavailability of sufficient numbers of local labourers to execute the work;
- b) the unavailability within the local community of the required skills necessary for the execution of specific portion of work, and where the completion period does not permit the creation of the necessary skills through training.

In both cases the Bidder shall prove to the satisfaction of the Engineer that he has exercised his best endeavours and taken all reasonable actions to recruit local labour.

The bidder shall maintain accurate and comprehensive daily records of all labour engaged on the bid and shall submit to the Engineer at two weekly intervals detailed labour returns substantiating the actual numbers of labourers employed, the amounts actually paid in respect thereof, and details of the various activities undertaken by the labourers.

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The employment of casual labour will be done in co-operation with community leaders and local structures. The minimum wage according to all people employed will be according to the requirements of the Department of Manpower.

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(j) Monthly statements and payment certificates

The statement to be submitted by the Contractor in terms of Clause 49 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

For the purposes of the Engineer's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Engineer for the purposes of accurately reflecting the actual quantities and amounts which the Engineer deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Engineer within three (3) normal workings days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of Subclause 49.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

(k) Construction in restricted areas

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices bidden will be deemed to include full compensation for any difficulties encountered by the Contractor while working in restricted areas. No extra payment nor any claim for payment due to these difficulties will be considered.

(l) Notices, signs, barricades and advertisements

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance, and ultimate removal and shall make provision for this in his bidden rates.

The Engineer shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works if in his opinion it is unsatisfactory, inconvenient or dangerous.

(m) Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff,

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together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates bidden for the related items of work.

The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.4.2.6 Extension of time due to abnormal rainfall

- (a) Extension of time in respect of delays resulting from wet climatic conditions on the Site will only be considered in respect of abnormally wet climatic conditions and shall be determined for each calendar month or part thereof, in accordance with the formula given below:

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

in which formula the symbols shall have the following meanings:

V = Potential extension of time in calendar days for the calendar month under consideration:
 If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.
 When the value of V for any month exceeds the number of days in the particular month, V will be the number of days in the month.

Nw = Actual number of days in the calendar month under consideration on which a rainfall of Y mm or more was recorded on the Site

Nn = Average number of days, derived from existing records of rainfall in the region of the Site, on which a rainfall of Y mm or more was recorded for the calendar month

Rw = Actual rainfall in mm recorded on the Site in an approved rain gauge for the calendar month under consideration

Rn = Average rainfall in mm for the calendar month, derived from existing records of rainfall in the region of the Site

The factor (Nw - Nn) shall be deemed to be a fair allowance for variations from the average number of days during which the rainfall exceeds Y mm.

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

- (b) The annual rainfall in the area varies between 500mm and 650mm. A vast amount of land is covered by the savannah veld in the Marea. The Dr JS Moroka municipal area is characterized by

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flat to gently sloping Bushveld/ Savannah vegetation in the north and central parts, and a mountainous area to the south which forms the border of the Thembisile local municipality. Cultivated areas (permanent and temporary dry and irrigated land) cover less than 15% of the municipality. Urban areas cover 14% of the municipality.

The potential extension of time V has been calculated for each month and year of the period concerned to indicate the possible effect of the rainfall formula. The values of V were obtained by applying the rainfall formula and using the actual rainfall figures and the calculated values of Rn and Nn indicated in the table.

- (c) The Contractor shall, at his own cost, provide and erect on the Site at a location approved by the Engineer, an approved rain gauge, which shall be fenced off in a manner which will prevent any undue interference by workmen and others. The Contractor shall, at his own cost, arrange for the reading of the rain gauge on a daily basis for the duration of the Contract. The gauge readings, as well as the date and time at which the reading was taken shall be recorded in a separate record book provided by the Contractor for this purpose. All entries in the rainfall record books shall be signed by the person taking the reading and the gauge shall be properly emptied immediately after each reading has been taken. If required by the Engineer, the Engineer shall be entitled to witness the reading of the gauge.
- (d) The Contractor's claims in terms of Subclause 42.2 of the Conditions of Contract for extension of time in respect of delays resulting from wet climatic conditions on the Site during each month, shall be submitted in writing to the Engineer monthly;

provided always that

- (i) the period allowed to the Contractor in terms of Clause 48 of the Conditions of Contract in which to submit his claim for each month shall be reduced to seven (7) days, calculated from the last day of the month to which the claim applies; and
- (ii) the 28-day period allowed to the Engineer in terms of Subclause 42.2 of the Conditions of Contract in which to give his ruling on the claim, shall be reduced to fourteen (14) days.

The Contractor's monthly claim shall be accompanied by a copy of the signed daily rainfall readings for the applicable month.

- (e) The extent of any extension of time which may be granted to the Contractor in respect of wet climatic conditions (whether normal or abnormal) shall be determined as the algebraic sum of the "V" values for each month between the Commencement Date and the Due Completion Date of the Contract, calculated in accordance with subclause C3.4.2.6(a) above;
 provided always that
 - (i) rainfall occurring within the period of the Contractor's Christmas shut-down period (referred to in Subclause 1.6 of the Conditions of Contract) shall not be taken into account in the calculation of the monthly "V" values;
 - (ii) rainfall occurring during any period during which the Contractor was delayed due to reasons other than wet climatic conditions on the Site, and for which delay an extension of time is granted by the Engineer, shall not be taken into account in the calculation of the monthly "V" values;
 - (iii) if the algebraic sum of the "V" values for each month is negative, the time for completion will not be reduced on account of subnormal rainfall, and

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- (iv) where rainfall is recorded only for part of a month, the "V" value shall be calculated for that part of the month using pro rata values for Nn and Rn.
- (f) The Engineer shall, simultaneous with granting any extension of time in terms of this clause, revise the Due Completion Date of the Contract to reflect an extension of time having been granted in respect of wet climatic conditions, to the extent of the algebraic sum of all the "V" values for all the preceding months of the Contract, less the aggregate of the "Nn" values for the remaining (unexpired) months of the Contract (viz less aggregate of the potential maximum negative "V" values for the remaining Contract Period). Thus, provided that where such period is negative, the Due Completion Date shall not be revised.
- (g) Any extension of time in respect of wet climatic conditions granted in terms of this clause shall not be deemed to take into account delays experienced by the Contractor in repairing or reinstating damage to or physical loss of the Works arising from the occurrence of abnormal climatic conditions. Extension of time in respect of any such repairs or reinstatement regarding damage shall be the subject of a separate application for extension of time in accordance with the provisions of Clause 42 and Clause 48 of the Conditions of Contract.

ALTERNATIVE 2 (Critical path method)

- (a) A claim for extension of time in respect of delays suffered by the Contractor in consequence of wet climatic conditions will be considered by the Engineer in terms of Clause 42 of the Conditions of Contract and in accordance with provisions set out hereunder.
- (b) For the purposes of extension of time, a delay caused by wet climatic conditions will be regarded as a delay only if, in the opinion of the Engineer, all progress on an item or items of work on the critical path of the Contractor's working programme as approved in terms of Clause 12 of the Conditions of Contract has been brought to a halt.
- (c) Unless it is customary to carry out the work, in respect of which a delay was suffered, by rotary shifts or by day and by night, only delays to critical path items experienced as a result of wet climatic conditions during normal working hours (as defined in Clause 38 of the Conditions of Contract) will be taken into account for extension of time. This will apply notwithstanding the fact that a delay may have occurred on a portion of the Works on the critical path due to wet climatic conditions, which work was being executed outside the said normal hours with the permission of the Engineer, granted in terms of Subclause 31.1 of the Conditions of Contract.

RAINFALL TABLE

- (d) The Contractor shall make due allowance within his programme submitted in terms of Clause 12 of the Conditions of Contract, for a total anticipated delay to items on the critical path resulting from wet climatic conditions, of Fifteen (15) normal working days (as defined in Clause 38 of the Conditions of Contract) during the Contract.
- (e) Extension of time, if granted by the Engineer, will be determined as the aggregate number of normal working hours for which all progress on the item or items on the critical path was brought to a halt as a result of wet climatic conditions, less the number of normal working days specified in subclause (d) above.

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- (f) In determining the revised Due Completion Date of the Contract, the Engineer shall add the equivalent number of normal working days delay determined in accordance with subclause (e) and all intervening normal non-working days to the prevailing Due Completion Date.

C3.4.3 PLANT AND MATERIALS

C3.4.3.1 Plant and materials supplied by the employer

The Employer shall not supply any plant or material.

C3.4.3.2 Materials, samples, and shop drawings

Materials or work that do not conform to the approved samples submitted in terms of Subclause 23.4 of the Conditions of Contract, will be rejected. The Engineer reserves the right to submit samples to tests to ensure that the material represented by the sample meets the specification requirements.

The costs of any such tests conducted by or on behalf of the Engineer, the results of which indicate that the samples provided by the Contractor do not conform to the requirements of the Contract, shall, in accordance with the provisions of Subclause 23.7 of the Conditions of Contract, be for the Contractor's account.

C3.4.4 CONSTRUCTION EQUIPMENT

C3.4.4.1 Requirements for equipment

Equipment hired from the local community where possible is encouraged.

C3.4.4.2 Equipment provided by the employer

Equipment hired from the Local Authority to be negotiated between the Contractor and the Employer.

C3.4.5 EXISTING SERVICES

C3.4.5.1 Known services

The existing services are shown on the drawings.

C3.4.5.2 Treatment of existing services

The Contractor will assume full responsibility for maintaining existing services in good running order. It shall be understood that the production of the existing plant shall in no way be impaired during the contract.

C3.4.5.3 Use of detection equipment for the location of underground services

The Contractor to detect all existing underground services at its own cost

C3.4.5.4 Damage to services

The Contractor shall be responsible to repair damage to services at its own cost.

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C3.4.5.5 Reinstatement of services and structures damaged during construction

The Contractor to reinstate services and structures damaged at its own cost.

C3.4.6 VARIATIONS AND ADDITIONS TO SABS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS

SABS 1200 A	:	General (1986)
SABS 1200 AB	:	Engineer's office (1986)
SABS 1200 C	:	Site clearance (1980)
SABS 1200 DB	:	Earthworks (pipe trenches) (1989)
SABS 1200L	:	Medium-pressure pipelines (1983)
SABS 1200LB	:	Bedding (pipes) (1983)
SABS 1200GA	:	Concrete Small Works (1983)

The following variations and additions to the SABS 1200 Standardized Specifications referred to above apply to this Contract. The prefix PS indicates an amendment to SABS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SABS 1200 to which the variation or addition thereto applies.

DEFINITIONS

Add the following:

Task: a quantified activity or operation

Daily task: the amount of work an average worker can complete in one day of 9 hours

Daily rate: the remuneration of a day's work, regardless of output

Daily wage: see daily rate

Task rate: the remuneration for a completed task

Daily task rate: the remuneration for a completed daily task.

Labour intensive construction the economically efficient employment of as great a portion of labour as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available, thus the effective substitution of labour for equipment.

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PSA GENERAL (SANS 1200 A)
Interpretations

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 Standardised Specifications, the Drawings or the Project Specifications. Specifications shall have the corresponding meaning, as provided for in sub-clause 1(1)(u) of the General Conditions of Contract”.

Measurement and Payment

Replace the definitions for fixed charge, time-related charge and value-related charge with the following :-

“Fixed Charge : A charge that is not subject to adjustment on account of variation in the value of the Contract amount or the Contract time for completion.

Time-related Charge : A charge, the amount of which is varied in accordance with the time for completion of the work as adjusted in accordance with the provisions of the Contract.

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

PSA 1 MATERIAL (Subclause 3.1)

PSA 1.1 QUALITY

Substitute the second sentence of the first paragraph of A 3.1 with the following:

Materials shall bear the official mark of the appropriate standard.

Substitute the second paragraph with the following:

The Contractor is responsible for the cost of all testing to ascertain that the materials do comply with the relevant minimum requirements and all such costs shall be deemed to be included in the tendered rates. The cost of control tests done by the Engineer and of which the results do not comply with the minimum requirements shall be for the Contractor's account. The Contractor shall inform the Engineer of any control testing to be done at least 48 hours before such tests are required and must allow in his program for the time necessary for the tests and the processing of the results thereof.

The handling, storage, transport, and erection of equipment, machinery, and materials shall be strictly in accordance with the requirements of the supplier and/or manufacturer.

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All materials shall be new and of the best quality available unless otherwise specified. They must function satisfactorily under prevailing climate and weather conditions at the place of installations.

PSA 2 PLANT

PSA 2.1 CONTRACTOR'S OFFICES, STORES AND SERVICES (Subclause 4.2)

Add the following to this subclause:

PSA 2.1.1 Storage

The Contractor shall supply sufficient protection for perishable materials to the satisfaction of the Engineer, and all materials shall be used in the order in which it was delivered. Cement older than three months shall be removed from the site and shall not be used in the Works.

PSA 2.1.2 Restrictions on Employee Accommodation

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

The Employer will place at the disposal of the Contractor an area to enable him to erect his site offices, workshops, stores, and any temporary housing the Contractor may wish to erect for his personnel. The temporary housing and ablution facilities shall comply with the requirements of the local Authority.

PSA 2.2 CAPACITY OF PLANT AND EQUIPMENT (Clause 4)

Add as Clause 4.3:

The Contractor shall supply plant and equipment in sound working condition and of adequate capacity to complete the Works well within the period or periods specified or stated in the appendix to the tender.

In addition, he shall have available on the Site adequate standby plant to ensure that operations designed to be executed continuously are not disrupted because of breakdown of any plant provided for such operations.

PSA 3 CONSTRUCTION

PSA 3.1 DETAILED SETTING OUT (Subclause 5.1.1)

The Contractor shall be solely responsible for the execution of the works to the correct line and level.

The Contractor shall carefully set out the works, employing a capable surveyor to the lines and levels gleaned from information provided.

The proposed network pipes must be placed 2,0m away from the erf boundaries in the road reserve. The tolerance allowed in setting out shall be 10mm either way.

Work set out by the Contractor shall be checked by the Engineer whereafter any errors be rectified by the Contractor.

The Contractor shall provide at least three days' notice of such a check to the Engineer. The Contractor shall supply any material and labour required for the control survey work by the Engineer including the supply of and placing the necessary pegs, sight rails, etc.

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Any discrepancy shall immediately be reported in writing to the Engineer. Any costs or subsequent costs arising from discrepancies, which had not been reported to the Engineer, shall be the sole responsibility of the Contractor.

Any assistance, including checking, rendered to the Contractor by the Engineer shall not be held as relieving the Contractor of his responsibility in this respect. Should any portion of these works be constructed incorrectly, the Contractor shall at his own expense rectify the work to the satisfaction of the Engineer.

The Contractor shall be held solely responsible for the protection of all bench marks, reference pegs and level pegs.

The Contractor shall establish at least three benchmarks at selected points.

PSA 3.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS

(Subclause 5.2)

Add the following to this subclause:

The Contractor shall ensure that he complies with all the requirements of the authorities concerned with respect to the safety of the works and labourers, including the provision and wearing of protective clothing. Any negligence or non-compliance of any of these requirements shall be viewed in a serious light and shall be sufficient reason for the Engineer to order the immediate suspension of the total extent of the Works.

The Contractor shall provide for artificial lighting for any part of the Works that may be required for the proper execution of the work.

The crossing of existing tar and dirt roads must be done in half widths, while the total traffic is accommodated on the other lane. Road traffic signs shall comply with the requirements of the "South African Road Traffic Signs Manual" and shall be approved by the Engineer before construction commences.

PSA 3.3 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES (Subclause 5.4)

Add the following to the subclause:

Before commencing any excavation, the Contractor shall verify the position of all known or suspected obstacles by inspection of the site, examination of drawings or, where necessary by the excavation of trial holes. Any damage caused to existing services and works shall be repaired as expeditiously as possible by the Contractor at his own expense and shall be reported immediately to the Engineer.

Where permanent protective works are ordered by the Engineer, such works shall be valued as a variation. The Engineer will supply the Contractor with such information as may be available concerning obstructions and services, but whilst such information is given in good faith, it shall not relieve the Contractor of any of his liabilities, obligations and risks under the Contract.

The Contractor shall be responsible for any damage to such public services and existing works in the execution of this Contract and shall reimburse the Public Authority or the Owner concerned for any repairs required or compensation for damage awarded.

Any alteration to public services shall be carried out by the Authority concerned.

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The Contractor shall provide the necessary assistance during any operations necessary in connection with the removal, alteration or safeguarding of any public service.

The relevant authority and Engineer shall be informed of any damages without delay.

PSA 3.4 DEALING WITH WATER ON WORKS (Subclause 5.5)

Add the following to the subclause:

The Contractor shall be responsible for the dewatering of excavations and the full and adequate protection of the works against damage by storm or water from any source whatever. He shall construct all necessary diversion works and drains to deal adequately with and bypass all water and carry out any necessary pumping of water and supply all tarpaulins or other covers which may be required to protect any section of the work during heavy rain or storm together with any other labour work and material which, in the opinion of the Engineer is necessary to keep the work dry and safe at all times.

Full risk and cost of dealing with water shall be borne by the Contractor.

PSA 3.5 POLLUTION (Subclause 5.6)

Add the following to the subclause:

The Contractor shall maintain all access roads and the area where the offices, stores and workshops are situated to the satisfaction of the Engineer. It shall be kept damp to limit dust and inconvenience or disturbance to the residents in the neighbourhood of the Works to a minimum.

PSA 3.6 DEGREE OF ACCURACY (Subclause 6.2)

Delete this subclause and replace with the following:

The Contractor shall construct each of the various parts of the Works to the degree of accuracy specified in the relevant standardized specification.

PSA 4 TESTING

PSA 4.1 APPROVED LABORATORIES (Subclause 7.2)

Add the following to this subclause:

No laboratory facilities are required on site. The Contractor shall use an independent laboratory for the necessary tests. Unless otherwise stated in the Bill of Quantities, the cost of all tests shall be for the account of the Contractor and no additional payment will be made for them.

PSA 5 MEASUREMENT AND PAYMENT (Clause 8)

PS A 5.1 Fixed-Charge and Value-Related Items

PSA5.1.1 Contractual Requirements..... Unit: Sum

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

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tendered amounts for fixed-charge and value-related items will not be increased, if extension of time for the completion of the works is awarded.

PS A 5.1.2 Establishment of Facilities on the Site

PS A 5.1.2.1 Facilities for Engineer

- a) Furnished office (No)Unit: Sum
- b) Carport.....Unit: Sum
- c) Name-board (No.)Unit: Sum
- d) Telephone.....Unit Sum
- e) Survey Assistant.....Unit Sum
- f) Survey Equipment.....Unit Sum

PS A 5.1.2.2 Facilities for the Contractor

- (a) Offices and storage sheds Unit: Sum
- b) Workshops Unit: Sum
- c) LaboratoriesUnit: Sum
- d) Living accommodationUnit: Sum
- e) Ablution and latrine facilitiesUnit: Sum
- f) Tools and equipmentUnit: Sum
- g) Water supplies, electric power and communicationsUnit: Sum
- h) Dealing with water Unit: Sum
- i) Access Unit: Sum

PSA 5.1.3 Other Fixed-Charge Obligations..... Unit: Sum

This item as listed under Schedule A of the bill of quantities is as specified in the standardised specification SANS 1200 A.

PSA 5.1.4 Removal of Site Establishment..... Unit: Sum

The sum shall cover the cost of the demolition on and the removal from the surface of the site of all items established in terms of 8.3.2 and 8.3.3, and shall provide for the making good and the restoring of the Site to the satisfaction of the Engineer

PS A 5.2 TIME-RELATED ITEMS

The tendered amount for a time-related item will be increased; if an extension of time for the completion of the works is awarded on the condition that the activity related to the item tendered for must be sustained during the extended period.

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The ratio between the increased amount for a time-related item and the tendered amount must be the same as the ratio between the extension of the time period for the completion of the works and the original time period allowed for completion of the works.

If the works is completed before the end of the original time period allowed for completion of the works, the tendered amount of a time related item that is influenced by the earlier completion would be reduced similarly.

PS A 5.2.2 SCHEDULED TIME RELATED ITEMS

PS A 5.2.2.1 Facilities for Engineer

- a) Furnished office (No)Unit: Sum
- b) Carport..... Unit: Sum
- c) Name-board (No.)Unit: Sum
- d) Telephone.....Unit Sum
- e) Survey Assistant.....Unit Sum
- f) Survey Equipment.....Unit Sum

PSA 5.2.2.2 Facilities for Contractor Unit: Sum

The sum shall cover the Contractor's time related costs of providing sureties, insurance of the works and plant, third party or public liability insurance and unemployment insurance to cover his compliance with the requirements of the Workmen's Compensation Act, 1941 (Act NO. 30 of 1941) and any other initial financing obligations of a preliminary and general nature, such as contributions to the CEITB. Establishment of Facilities on the Site Facilities for Engineer

PS A 5.2.2.2 Facilities for Contractor

- (a) Offices and storage sheds.....Unit: Month
- b) Workshops Unit: Month
- c) Laboratories Unit: Month
- d) Living accommodation Unit: Month
- e) Ablution and latrine facilitiesUnit: Month
- f) Tools and equipmentUnit: Month
- g) Water supplies, electric power and communications Unit: Month
- h) Dealing with water Unit: Month
- i) Access Unit: Month

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PSA 5.2.3 Supervision for Duration of Construction..... Unit: Sum

The sum shall cover the costs of on-site supervision and such local administration as the Contractor considers necessary for the proper completion of the Works, and shall cover the cost of the salaries, wages and allowances paid to the site agent, general foreman, section foremen (where applicable), site surveyors, timekeepers, assistants and other site supervisory staff, and of transport incurred in connection with such staff. Plant (designated plant or plant for designated operations or plant for use during Supervision for Duration of Construction).

PSA 5.2.4 Company and Head Office Overhead Costs for the Duration of the Contract....Unit: Sum

The sum shall cover the Contractor's company and head office overhead costs.

PS A 5.3 SUMS STATED PROVISIONALLY BY ENGINEER

PS A 5.3.1 Community Liaison Officer Unit: P/Sum

The Contractor must pay a salary to a person appointed as the Community Liaison Officer for the project. The amount of payment and payment dates will be determined as soon as the Community Liaison Officer is appointed.

PSA 5.3.2 PSC Meetings Attendance Unit: P/Sum

The tendered rate shall cover the compensation of all members of Project Steering Committee for attending meetings. The amount of payment and payment dates will be determined on the commencement date of the project. The Engineer should authorise payment before it is made. Proof of payment has to be submitted to Engineer before claim can be certified.

PS A 5.3.3 Overheads, charges and profit on (1) above Unit: %

Handling cost and profit in respect of sub-item 5.3.1&2. A percentage of the payment made to the Community Liaison Officer and PSC Meeting attendance will be paid to the contractor. The rate shall cover the Contractor's overheads, charges, and profit on payments for the Community Liaison Officer and PSC members. No payment will be made under this item before payment to the Community Liaison Officer and PSC members.

PS A 5.3.4 Training Unit: P/Sum

Provisional sum for training services supplied by the Training Company. The name and contact details of the Training Company, to be appointed by the Contractor, will be supplied to the Contractor by the Employer or Engineer.

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- i. Generic Skills.....Unit:P/Sum
- ii. Entreprenaural skills..... Unit:P/Sum

PS A 5.3.5 Overheads, charges and profit on (1) above Unit: %

Handling cost and profit in respect of sub-item 8.5(b)1. A percentage of the payment made to the Training Company will be paid to the Contractor. The rate shall cover the Contractor's overheads, changes, and profit on payments for the Training Company. No payment will be made under this item before any payment is made to the Training Company.

PS A B.5.3.6 Occupational, Health and Safety Act.....Unit: Sum

Handling cost in respect of sub-item 8.3.5. A percentage of the payment made to the Occupational health and safety act will be paid to the Contractor under this section. The rate shall cover the Contractor's overheads, changes, and profit on payments for the Occupational health and safety act.

1. Provision for safety officer

The Contractor should appoint the safety officer who will be full time responsible for all safety issuers on site, and he or she should be full time on site.

The tendered rates include the full compensation for that part of the provision of safety officer in terms of the Occupational Health and Safety Act and the construction regulation which are mainly a function of time. Payment shall be made monthly.

Handling cost in respect of sub-item 8.3.5.2 (a). A percentage of the payment made to the Safety Officer will be paid to the Contractor. The rate shall cover the Contractor's overheads, changes, and profit on payments for the Safety Officer.

PS A B.5.3.7 Contractor's time related obligation in respect of the OH&S Act and Construction regulation

The tendered lump sum shall represent full compensation for that part of the contractor's general obligations in terms of Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. The lump sum will be paid monthly only after payment for item 1.3.3 and item 1.1.5 has been made Payment of the lump sum shall be made monthly (calculated by the division of the lump sum by the number of months remaining).

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PSAB : ENGINEER'S OFFICE

PSAB 1 MATERIALS

PSAB 1.1 NAMEBOARDS (Subclause 3.1)

Add the following to the subclause:

Notwithstanding the provisions of Subclause 3.1 of SABS 1200 AB, the standard nameboards complying with the recommendations of the South African Association of Consulting Engineers shall be provided. Details of the nameboard will be available from the Engineers.

PSAB 1.2 OFFICE BUILDINGS (Subclause 3.2)

Delete this subclause and replace with the following:

The Contractor shall provide the following furnished offices for the use of the Engineer and the Client. Each office shall consist of one room with the following floor area:

- i) Engineers office : 18 m²

The clear height of all offices between floor and ceiling shall be 2,5m minimum. All windows shall be of the type that can be open over the full window area.

Each office shall be weatherproof, shall have a concrete floor 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 3m². Each office shall be well ventilated and shall be so insulated as to provide comfortable working conditions. The internal furnishings of each office shall include:

- a) one trestle table, 2m long x 1m wide x 0,9m high, with a smooth top;
- b) one table or desk having a top of size at least 1,5m x 0,9m and at least one lockable drawer;
- c) one high stool;
- d) two chairs;
- e) a lockable upright steel cabinet with three shelves or a steel filing cabinet with four drawers;
- f) shelving of total length 3m and of nominal width 300mm;
- g) an acceptable blind on each window,
- h) a wash-hand basin;
- i) acceptable lighting;
- j) provision for heating in winter and cooling in summer;
- k) one conference type steel table with folding legs of size at least 4,0m x 0,9m.

The Contractor shall also supply a toilet for the exclusive use of the Engineer.

PSAB 1.2 CAR PORTS (New Subclause 3.2 (k))

The Contractor shall provide two permanent car ports for the use of the Engineer. The car ports shall be so constructed that the vehicles parked under them will at all times be shaded from direct sunlight. The car ports shall be at least 20m² in area and shall have a hard stand of crushed stone.

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PSAB 2 CONSTRUCTION

PSAB 2.1 SURVEY EQUIPMENT (Subclause 5.5)

Add the following:

The Contractor shall provide the following survey equipment on the site from the commencement to the completion of the Works:

1. 1 Tachometer capable of reading 20 seconds of arc;
2. 1 Engineer's level and level staff;
3. 2 Tachometer staffs graduated metrically;
4. 1 Steel tape of length 30m.

The tachometer may be shared by arrangement between the Contractor and the Engineer's Representative, but the remaining instruments shall be provided for the exclusive use of the Engineer's Representative. The Contractor shall keep the equipment continuously insured against any loss, damage, or breakage and he shall indemnify the Engineer and the Employer against any claims in this regard. Upon completion of the whole of the Works, the ownership of the equipment shall revert to the Contractor.

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

PSAB 2.2 CELLULAR PHONE (New Subclause 4.2)

The Contractor shall supply the Engineer with a cellular phone for the Engineer's sole use. The Contractor shall be responsible for the supply, maintenance, payment of accounts, etc. of the cellular phone. Ownership of the equipment shall revert to the Contractor at the end of the Contract.

PSAB 2.3 MEASUREMENT AND PAYMENT OF SURVEY EQUIPMENT

Provide and maintain survey equipment.....SUM

The rate shall cover the charges for the provision, insurance and maintenance of the equipment.

PSAB 3 SURVEY ASSISTANTS (Subclause 5.5)

Add the following:

The Contractor shall make available to the Engineer two suitably trained survey assistants for use on and about the SITE at all reasonable times for the duration of the Contract.

PSC : SITE CLEARANCE

PSC 1 MATERIALS (Clause 3)

PSC 1.1 DISPOSAL OF MATERIAL (Subclause 3.1)

Add to this subclause :

Material obtained from clearing and grubbing and from the demolition of structures shall be disposed of in a borrow pit indicated by the Engineer and shall be finished to the satisfaction of the Engineer.

PSC 2 CONSTRUCTION (Clause 5)

PSC 2.1 INDIVIDUAL TREES (Subclause 5.2.3.2)

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. Initial: DR. JSM

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Witness:



Add to this subclause :

Should the Contractor remove or damage any tree marked to be preserved, a penalty of R200,00 per tree shall be payable.

PSC 2.3 EXISTING FENCING

The fencing parallel to the pipeline routes must only be removed and re-erected at the positions as indicated and approved by the Engineer and repaired where it was damaged. When the pipeline routes cross fencing or gates temporary wire gates must be provided that must be kept closed. After completion of the work these fences or gates must be repaired to the same condition as before commencement of the work.

PS C 3 MEASUREMENTS AND PAYMENT

PS C 3.1 SCHEDULED ITEMS

PS C 3.1.1 Clear and grub (0.8m wide) Unit: m

The removal of all rocks and boulders on site over 0,15 m³ will be paid under sub clause D 8.3.2(b). The removal of hard rock other than boulders will be paid under sub clause PS DB 8.3.2(b).

PSC 3.1.2 Remove and grub large trees and tree stumps of girth

a) over 1 m and up to and including 2 m Unit: No

b) over 2 m and up to and including 3 m Unit: No

The girth of a tree or stump will be measured at the narrowest point of the tree or stump in the first metre of its height above ground level. Trees and stumps of girth exceeding 1 m will be measured individually and classified according to site in increments of 1 m as indicated above.

The rate shall cover the cost of clearing and grubbing trees and stumps of all sizes, cutting branches, backfilling holes, and removing, transporting, and disposing of all such trees, stumps, and branches and associated material.

PSC 3.1.3 Remove and grub all trees and tree stumps regardless of girth Unit: No

In exceptional circumstances, where construction is carried out through plantations or where the quantity of trees or girth exceeding 1 m renders individual measurement impracticable the project specification may provide that the clearing and grubbing of trees be measured in hectares. If this method of measurement is used the areas to which it is applicable will be defined clearly on the drawings and the reason for adopting the method of measurement will be stated in the project specification. The rate shall cover the cost of all operations specified in .8...2.2.

PSC 3.1.4 Take down existing fence..... Unit: m

The rate shall cover the cost of taking down the fences, coiling wire, sorting and stacking all material at sites indicated by the Engineer and the cost of loading, transporting and offloading such material.

BIDDER:

DR. JSMLM:

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Initial: DR. JSM 2

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Witness:



PSDB : EARTHWORKS (Pipe Trenches)

This specification covers earthworks for trenches for all types and sizes of pipes. It covers excavation, the preparation of a trench bottom, backfilling and the reinstatement of surfaces.

PSDB 1 MATERIALS (Subclause 3)

PSDB 1.1 CLASSIFICATION OF EXCAVATED MATERIAL (Subclause 3.1)

Delete this subclause and replace with the following:

Distinction shall be drawn, for payment purposes, between excavation in hard and soft material. All excavation for pipe trenches shall be classified in accordance with the following classification.

PSDB 1.1.1 Soft excavation

Soft excavation shall be excavation in all existing fill material as well as excavation in material which can be efficiently removed by any of the following plant.

A bulldozer having a mass, including the mass of the ripper if fitted of 35 ton and having a flywheel power of approximately 220 kW or a backactor having 0,15 kW per millimetre bucket width.

PSDB 1.1.2 Hard excavation

Hard excavation shall be excavation in material which cannot be efficiently ripped by plant as described in PSDB 1.1.1. This excavation generally includes material such as formation of weathered rock which can only be removed after blasting or boulders of 0,5 m³ or larger in volume.

The Contractor shall be at liberty to use any method he wishes to excavate any class of material, but the method of excavation shall, however, not dictate the classification of the excavation.

The Engineer shall decide under which one of the above classes any excavation shall be classified and paid for. In the first instance the classification shall be based on inspection of the material to be excavated and the method of excavation proposed by the Contractor. In the event of disagreement between the Contractor and the Engineer, the Contractor shall, if required, make available such mechanical equipment as specified in order to test the reasonable removability or otherwise of the material. The decision of the Engineer as to the classification shall thereafter be final and binding.

The Contractor shall immediately inform the Engineer as and when the nature of the material being excavated changes to the extent that a new classification for further excavation is warranted. Failure on the part of the Contractor to timeously advise the Engineer shall entitle the Engineer to classify, in his sole discretion, such excavation as may have been executed in material of a different nature.

PSDB 1.2 FREEHAUL (Subclause 5.6.8)

Delete this subclause and replace with the following:

The free haul distance within which the Contractor will be required to move material without separate compensation shall be 2,0km. Overhaul will be paid for the moving of material beyond that distance.

PS DB 2 PLANT(Subclause 4.1)

PS DB 2.1 EXCAVATION EQUIPMENT

Add the following to DB 4.1:

BIDDER:

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Witness:



An adequate number of suitable tools, including hand stampers, wheelbarrows and hosepipes shall be provided by the Contractor. The Contractor will supply mechanical compaction equipment and when required pneumatic and rock breaking equipment. All excavations exceeding the specified widths shall be backfilled with approved selected material. No payment shall be made for this and all relevant costs shall be deemed to be included in the tendered rates.

PSDB 3 CONSTRUCTION (Clause 5)

PSDB 3.1 PRECAUTIONS

PS DB 3.1.1 Water in Trenches

Water in pipe trenches may cause movement of the pipes as a result of flotation and backfilling must therefore be executed as quickly as possible. If movement of the pipes does occur the contractor must, unless otherwise instructed by the Engineer, remove the pipes from the trench and reinstall it at his own expense.

PS DB 3.2 EXCAVATION

Add the following to DB 5.4:

"Excavation and backfilling of pipe trenches on sidewalks in the residential area shall be done in such a manner as to ensure the least possible disruption to the public and access to the properties. No additional payment shall be made for this and all relevant costs shall be deemed to be included in the tendered rates.

PS DB 3.3 TRENCH BOTTOM

Substitute "90 %" in the second paragraph of DB 5.5 with "93 % ".

PS DB 3.3.1 Over Excavation of Trenches

Where pipe trenches are excavated deeper than specified or shown on the drawings, these excavations must be backfilled with suitable approved selected material in layers of not more than 150mm uncompacted thickness and must be compacted to the thickness of the adjoining in-situ material or as prescribed by the Engineer.

PS DB 3.4 BACKFILLING

PS DB 3.4.1 General

Backfilling in road reserves must be compacted in 150mm layers up to natural ground level.

BIDDER:

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Witness:



Where prescribed by the Engineer all surplus material must be neatly piled over the real trench width to a height not more than 150mm higher than the adjoining level.

PS DB 3.4.2 Disposal of Soft Excavation Material

Add the following to DB 5.6.3:

All surplus and unsuitable material as described in DB 5.6.3 shall be disposed of at the spoil site, (as described in PS D 5.2.2.3) and levelled.

PS DB 3.5 COMPACTION

PS DB 3.5.1 Areas Subject to Traffic Loads

Add the following to DB 5.7.2:

All pipe trenches within road crossings, accesses to services, farms and camps that fall within the road reserve, will be regarded as areas subject to traffic loads. Backfilling of trenches that are subject to traffic loads will be executed in layers of 150mm as follows:

Item	% mod AASHTO	Final Layer Thickness
Approved Backfill	93%	150mm
Main Backfill up to road layers	96%	150mm
Sub-base	97%	150mm
Base	98%	150mm

PS DB 3.6 REINSTATEMENT OF SURFACE

PS DB 3.6.1 Private Property and Commonage

Add the following to DB 5.9.2:

Gardens and lawns shall be repaired to the original standard where they were crossed. Grass and plants shall be taken out of the ground, temporarily stocked, watered during construction, and replanted after backfilling.

BIDDER:

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Witness:



PSDB 4 MEASUREMENT AND PAYMENT (Subclause 8)

PSDB 4.1 BASIC PRINCIPLES (Subclause 8.1.1)

Change the following in this subclause:

The free haul distance will be 2,0km and not 0,5km.

PSDB 4.2 CALCULATION OF QUANTITIES (Subclause 8.2.3)

Change the first sentence of the subclause to read as follows:

Where volumetrically measurement is necessary, the volume will be computed from the difference in level between natural ground level and 100mm below pipe invert level as shown on the drawings.

PS DB 4.2.1 Shoring

Add the following to DB 8.2.4:

Shoring will only be measured and paid for, if the Engineer gives written approval before it is installed.

PSDB 4.2.2 Excavation

(a) Excavation in all material for trenches, backfill, compact and dispose of surplus material..... Unit (m)

Item will be provided for various pipe diameters in steps not greater than those specified in 5.2 and various depths in increments of 1.0 m measured to the bottom of the bedding layer (see Drawing DB 2, DB 3, and DB 4). Where measured volumetrically in terms of 8.1.2 (a), the volume of excavation will be computed in accordance with 8.2.2 and 8.2.3

The rate shall cover the cost of the same operation in heading where the Contractor elects to use such a method of excavation. The volume or length will be measured for payment on the assumption that normal trench excavation has been carried out. The volume or length in the undisturbed prism of material between the top of the tunnel and ground level will be classified as soft excavation in terms of 3.1. No additional payment will be made for such headings and no deductions will be made for reduced excavation quantities.

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Witness:



(b) Extra-over item (a) above for:

1. Intermediate excavation Unit: m³
2. Hard rock excavation..... Unit: m³
3. Hand excavation and backfill where ordered by the engineer..... Unit: m³
4. Soil Crete backfilling where directed by the engineer. Unit: m³

Separate items will not be provided for depth increment, volume will be computed from the trench width determined in accordance with 8.2.3 and the depth from the top of the intermediate or hard rock excavation, as the case may be, either to the bottom of the same material or to the bottom of the trench as specified in (a) above, whichever is the lesser (see Drawing DB 5

The rates shall cover the additional cost of the excavation and hauling of the more difficult material of unsuitable material. The Contractor must obtain written approval for all stages on item (b) (a) 1 to 4.

c) Excavate and dispose of unsuitable material from trench bottom (provisional... Unit: m³

The volume will be computed from the trench width determined in accordance with 8.2.3 and m³ the additional depth ordered.

The rate shall cover the cost of the excavation of the additional depth in any material, the disposal of the unsuitable material as specified for soft: excavation in 5.6.3 within free haul distance and the backfilling of the additional depth with suitable material from the side of the trench.

PSDB 4.2.3 EXCAVATION ANCILLARIES

PSDB 4.2.3.1 Make up deficiency in backfill material

- a) from other necessary excavations on siteUnit: m³
- b) by importation from-designated borrow pits Unit: m³
- c) by importation from commercial or off-site sources selected by the ContractorUnit: m³

Items (b) and (c) above will not be measured for payment unless importation has been ordered in writing. The volume will be computed from the trench width determined in accordance with 8.2.3 and the depth from the top of the backfill to the top of the bedding as shown on Drawing DB-1 or the actual depth of backfill used to make up the deficiency or the depth of additional excavation ordered in terms of B.3.2(c), as applicable.

The rate for material from other necessary excavations on site shall cover the cost of selection of suitable material, the moving of the material to points alongside the trench spaced to suit the

BIDDER:

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Witness:



Contractor's method of working, and the disposal of the material that is replaced, all within free-haul distance.

The rate for material from designated borrow pits shall cover the cost of royalties, if applicable, excavation and selection of suitable material, the moving of the material to points alongside the trench spaced to suit the Contractor's methods of working, and the disposal of the material that becomes surplus as a result of the importation, all within free-haul distance.

The rate for material from commercial or off-site sources selected by the Contractor shall cover the cost of the acquisition of the material (including royalties, if applicable), the moving of the material to points alongside the trench spaced to suit the Contractor's methods of working, and the disposal of the material that becomes surplus as a result of the importation, all within free-haul distance (see Subclause 5.2.5.1 of SANS 1200 D or Subclause 5.2.6.1 of SANS 1200 DA, as applicable).

PS DB 4.2.3.2 Opening up and closing down of designated borrow pitUnit: Sum

This item will only be scheduled when a new borrow pit has to be established or when access to an existing borrow pit has to be established.

With the exception of the cost of the removal and spreading back of the topsoil (if scheduled), the sum shall cover the cost of opening up and of restoring the Site as specified in Subclause 5.2.2.2 of SANS 1200 D or Subclause 5.2.2(f) of SANS 1200 DA, as applicable.

PS DB 4.2.5 Existing Services

Existing Services-that Intersect or Adjoin a Pipe Trench (see Sub-clauses 5.1.2 and 8.3.8 of SANS 1200 D or Sub-clauses 5.1.3 and 8.3.5 of SANS 1200 DA, as applicable.) (See Subclauses 5.1.2 as applicable.)

(i) Services that intersect a trench (angles between centre-lines in plan of 4590°)..unit (No)

Except where water pipes are to be recovered, existing water pipes, sewers, stormwater pipes, concrete-lined channels and drains, box culverts, electric cables, ducts, kerbs, channels, erf connections and various sizes of pipes and services that intersect a trench of specified width and require various degrees of care, whether or not their presence is known before they are uncovered, will be measured separately. The unit refers to one service, but services that are so grouped that they can be contained within a horizontal dimension of 200 mm measured at right angles to the axis of the services will be measured as one unit.

(b) Services that adjoin a trench (parallel to or at an angle between centre-lines in plan of less than 45degrees) Unit No)

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Witness:



In a case where a trench of specified width

1 runs parallel to or at an angle (in plan) of less than 45° to an existing service, and is such that the nearer side of the bottom of the trench lies at least partly between a vertical plane and a plane that lies at an angle of 45° below the horizontal, both planes passing through the axis of the service, the length of service within the minimum base width of the trench, determined in accordance with 5.2, will be measured for payment under this item and the remaining length, the side of the trench which, in the opinion of the Engineer, is rendered liable to collapse because of the existence of such service, will be measured for shoring (see 8.3.4(a)).

The rate for an item scheduled in terms of (a) and (b) above shall cover the additional cost of

- i) care in excavation necessitated by the presence of such service in or across the trench;
- ii) protecting and maintaining such service in operation by means of temporary supports or shoring, as necessary;
- iii) delays and disruption of the progress of the work due to the existence of the service¹ and
- iv) repairs necessitated by damage caused by the Contractor.

PS DB 4.2.6 Finishing

PS DB 4.2.6.1 Reinstate road surfaces complete with all courses Unit: m²

Replace DB 8.3.6.1 with the following:

a) Gravel..... Unit: m²

The area will be calculated from the length of finished road or paved surfaces as applicable and with the trench width taken as 0,8m. Payment for finishing will be additional to that for excavation covered by 8.3.2.

The rate shall cover the cost, selective excavation (including the equipment that is required to break up, remove and, if necessary, stockpile the original surface material), and subsequently of reinstating and compaction and shall include the cost of delays and the cost of any risk of having to repair damage as specified in DB 5.10. Compaction to be according to PS DB 5.7.2

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Witness:



PSL MEDIUM PRESSURE PIPELINES

This specification covers the supply and installation of pipelines of diameter up to 1 000 mm, Complete with ancillary works, for transporting water and sewage under working pressures of up to 2.5 MPa.

PSL 1 MATERIALS

PSL 1.1 GENERAL

Replace the first sentence of L 3.1 with the following:

HDPE pipes, where relevant, will be used in the water pipelines.

Pipes and fittings shall be of the types specified in the schedule or in the project specification and, unless otherwise required in terms of the project specification, they and their couplings shall be capable of withstanding the applicable test pressure specified in 7.3.1. All pipes and fittings shall be supplied complete with couplings and jointing material.

Satisfactory temporary end covers shall be provided for the protection of threads, flanges, and prepared ends of plain-ended pipes and fittings, and to prevent damage to internal lining during transportation and during handling on Site.

Pipeline materials shall be so transported, stored, and handled that pipes are not overstressed at any time and fittings are not damaged in any way. HDPE pipes to be stored under shade for the period between delivery to site and pipe laying and backfilling. All thin-walled, flexible, and soft-coated pipes shall be handled with particular care and shall be so stored that they are not subject to concentrated pressure from stones or other objects. Pipes damaged or cracked in any way shall be removed from the Site.

PS L 1.2 STEEL PIPES, FITTINGS AND SPECIALS

PS L 1.2.3 Pipes of Nominal Bore over 150mm

ADD THE FOLLOWING PARAGRAPHS:

"All mild steel pipes and fittings other than screwed and socketed pipes, shall comply with the requirements of SABS 719 grade A. Specials shall be manufactured from straight pipes in accordance with the relevant requirements of BS534. All welding in pipes and specials shall be electric fusion welding.

Before leaving the factory all mild steel pipes and fittings shall be protected against corrosion in accordance with the relevant Particular Specification.

BIDDER:

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Witness:



Plain ends of pipes and fittings shall be covered and protected against damage while being transported from the factory to the Site.

The Contractor is responsible for preparing detailed dimensioned pipe schedules for the approval of the Engineer prior to the start of fabrication of the pipes, fittings and specials.

The Engineer will supply a general arrangement drawing of each pipeline showing its start and end points as well as its horizontal and vertical alignment together with positions of valves and other specials

The Contractor will be responsible for detailing each individual pipe and pipe special. Site welding shall not be permitted due to its deleterious effect on linings and coatings. All pipes and specials shall be eminently suitable for receiving internal linings as specified.

Welding and visual examination of mild steel piping shall be carried out in accordance with BS 4871 Part 1, BS 2633 or BS 2571 as appropriate. Dye penetration examination shall be undertaken on not less than 10 % of all welds.

PS L 1.2.4 Fittings and Specials

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

"All pipe specials shall be accurately made to the sizes and dimensions specified or given on the drawings and/or Schedule.

Unless otherwise specified, segmented steel bends shall be made with a radius equal to 2.0 times the pipe diameter. If details of segmented bends are not provided, the bends shall have one mitre weld each, up to and including a deflection angle of 22.5° and two mitre welds each up to and including 45°, and three mitre welds each up to and including 90°.

All other fittings and specials (excluding pipe bends) to be in accordance with SABS 719 unless otherwise indicated on the drawing.

The vertical axis of all fabricated steel items shall be accurately identified by using paint marks on the pipe ends."

PS L 1.2.5 Welding Operators and Procedures

ADDITIONAL CLAUSE AFTER 3.4.4:

PS L 1.2.5.1 Competence of Workmen

"The Contractor shall employ only competent and coded welders and shall submit certificates proving the competence of welders. The Engineer will ask for additional competence tests if and when required."

BIDDER:

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Witness:



PS L 1.2.5.2 Welding Procedure

Welding is to conform to the latest edition of API 1104 and BS 4515 field welding of carbon steel pipelines.

Before the start of any welding work under this Contract, the Contractor shall submit his proposed welding procedures of the various types of welds to the Engineer for approval. The Engineer may require procedures to be qualified by destructive testing.

Once the welding procedures have been approved, no modifications will be allowed without the consent of the Engineer in writing.

No welding shall be done until the welding procedures and welders have been properly qualified in accordance with the procedure and performance qualification test requirements of SABS 044. Exception may be allowed if the fabricator can submit records of such tests which have been made by an independent inspection authority.

PS L 1.3 JOINTING MATERIALS

PS L 1.3.1 Flanges and Accessories

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

“The requirements of SANS 1123 are applicable.

All flanges for pipes of nominal bore up to 150mm shall be full face slip-on flanges made of ASTM A 105 grade 1 steel to ANSI B16.5.

All flanges for pipes of nominal bore exceeding 150mm shall be full face flanges made of grade 43 steel to BS 4360 (or equal). Bolts shall be made from grade B steel to ASTM A307.

Stainless steel bolts are to be used for all stainless steel flanges. Wall or puddle flanges shall be made of flat iron, 75mm X 8mm thick, welded to pipe specials on both sides of the flange. Where stainless steel flanges are to be bolted to mild steel flanges, isolating bushes and washers are to be used to electrically isolate two connected pipe sections. Gaskets used shall have adequate isolating capacity in terms of cathodic protection requirements.

Flange drilling to conform to SANS 1123/2001 (Table as indicated on the Drawings). It is the Contractor's responsibility to ensure that the flange sizes and drilling match.

Material for gaskets on flanged joints shall comply with the requirements of BS 4865 and be cut to the full width of the flange. The material shall be selected to accommodate the maximum conditions of temperature, pressure, and to be compatible with the material conveyed.”

BIDDER:

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Witness:



PS L 1.3.2 Loose Flanges

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

“Slip-on flanges, when required, shall be welded inside and outside. There shall be a distance from the face of the flange to the pipe end equal to the pipe wall thickness plus 3mm. The seal weld shall be applied so that the flange face shall be free of weld spatter and does not require re-facing. Unless otherwise indicated, the flange bolt holes shall be orientated to straddle the vertical centreline in the case of vertical flange face. For horizontal flange face, bolt holes shall straddle the north-south centrelines.”

PS L 1.3.3 Bolts, Nuts and Fasteners

ADD THE FOLLOWING NEW SUB-CLAUSE:

“Bolts, nuts and other fasteners for the assembly and installation of fabricated components and standard flanges other than anchor bolts shall be hexagon head type complying with the requirements of SABS 135 with ISO threads of the coarse pitch series. Except where high tensile fasteners are required the material shall be of equal or better corrosion or coating than the items being fastened.

Washers of the same or compatible material as the bolts shall be provided at each nut. The use of multiple washers will not be accepted. Spring washers together with flat washers shall be fitted to all nuts subject to vibration. Bolts shall project not less than 3mm and not more than 8mm from the head of the nuts after tightening. Projections on individual and common flange sets shall be identical.

Bolts, nuts and washes shall be hot dip galvanised as a minimum level of corrosion protection unless stainless steel is specified. Plated nuts, bolts and washers shall not be used on the permanent Contract Works.

High tensile bolts shall only be used when it is essential and shall be coated to a system approved by the Engineer.”

PS L 1.3.4 Couplings

ADD THE FOLLOWING NEW SUB-CLAUSE:

“General purpose flexible couplings for M.S. and 3CR12 pipelines shall be “Viking Johnson” or similar type as approved by the Engineer and manufactured from the same material as the pipes to be coupled. Nuts and bolts shall comply with Sub-clause PSL 3.8.8.

All buried couplings shall be completely wrapped in “Denso” or equal approved mastic impregnated tape after installation and testing.

All exposed couplings shall be coated to the same specification as the pipeline in which they are used.”

BIDDER:

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Witness:



PSL 1.4 CORROSION PROTECTION

PSL 1.4.1 Protection of Steel Pipes and Accessories

All the pipe items of steel with diameters from 100mm and more must, unless otherwise specified be provided of three coats of epoxy paint (KSIR 88 or similar) to provide a final film of 300-micron dried thickness. Application must be according to the suppliers' prescription and must be on the inside and outside. Steel pipe items with diameters smaller than 100mm must be protected using galvanising or epoxy paint.

PSL 1.5 VALVES (Subclause 3.10)

Delete this clause and replace with the following:

Valves shall comply with the requirements of SABS 664. All valves shall be tested hydraulically to the specified pressure. During testing the valves shall meet two conditions: firstly, with the pressure applied with the valve completely open and thereafter to either side of the gate with the valve completely closed.

All valves shall be coated with a protective layer of paint or solution applied in an approved manner. All valves shall close in an anticlockwise direction when viewed from above on the spindle. All cap tops supplied on the range of valves, shall be of the same size in order that ne size valve key may be used.

PSL 2 CONSTRUCTION

PSL 2.1 LAYING

PSL 2.1.1 General

Where connecting to the existing pipeline the position of the existing pipeline must be established by excavating test holes (hand excavation) before any trench excavation to the planned connection point is undertaken. The Contractor will not be compensated for excavation and any other work that is executed and proves to be unnecessary because this specification was not followed.

PSL 2.1.2 Depth And Covering (Subclause 5.1.4)

Delete this clause and replace with the following:

Except where permitted in PSL 2.1.2 hereafter, water pipes shall be positioned in such a way as to maintain a minimum cover of 1 000mm from the finished surface to the top of the pipe.

Where stormwater pipes and/or sewer pipes cross the water pipe, the minimum free distance between the outside of any of the pipes and the outside of the coupling of the water pipe shall be 150mm. Should, at the specified minimum cover, the free distance be less than 150mm, the water pipe will be lowered to the required level ensuring the free distance for a minimum distance of 1,0m, either side of the centre line

BIDDER:

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Witness:



of the stormwater- or sewer pipe, beyond which the pipe will be sloped back to the required level according to PSL 2.1.1 as detailed in subclause 5.1.4.2 of SABS 1200 L.

PS L 2.2 JOINTING METHODS

PS L 2.2.1 Flanges (Steel Pipelines)

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

Pipes shall not be aligned and levelled such that the pipes, specials and valves strain the flexible couplings. All precautions shall be taken to ensure watertightness for every type of coupling.

Where specified, pipes on both sides of flexible couplings shall be anchored across the coupling with tie rods or straps to prevent them pulling out.

PSL 2.2 CONNECTION AT EXISTING PIPES

Add the following to this clause as subclause 5.11:

All the consumers concerned as well as the Engineer and the Statutory Authority shall be notified in writing at least one week before the existing water supply is interrupted. Arrangements for the interruption of the water supply shall be made in advance with the Statutory Authority and the Contractor shall not be entitled to lodge any claims as a result of problems caused by non-compliance. Under no circumstances shall employees of the Contractor be allowed to interrupt the water supply at any time.

All activities during the interruption of the water supply shall be planned and co-ordinated beforehand and all the preparations possible shall be completed before the interruption to minimise the inconvenience to the consumers. The Engineer has the authority to stop or to postpone the interruption and the Contractor will not be entitled to any claims in this regard, should the Engineer be of the opinion that the interruption was prolonged more than necessary as a result of bad planning by the Contractor.

PS L 2.3 SETTING OF VALVES, SPECIALS AND FITTINGS

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

Valves shall be jointed such as to remain operative when the downstream pipe is removed.

All valves shall be placed as and where indicated on the drawing.

BIDDER:

DR. JSMLM:

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Witness:



PSL 2.4 CONCRETE ENCASING

Replace the first sentence of L 5.4 with the following:

Concrete encasing with concrete with strength of 20 MPa/19mm, must be provided at positions indicated by the Engineer. Provision must be made to keep the pipe in position during the placement of the concrete encasing. The length of concrete encasing will be determined by means of site instructions from the Engineer.

PSL 2.4.1 Soil Crete Encasing

Add the following:

A mixture of Portland cement and gravel of base quality that is mixed in a ratio of 1:10 must be provided at positions indicated by the Engineer. Provision must be made to keep the pipe in position during the placement of the soilcrete encasing. The length of soilcrete encasing will be determined by means of a site instruction from the Engineer.

PSL 2.5 VALVE CHAMBERS

PSL 5.6.1 General

Substitute the first sentence of L 5.6.1 with the following:

The drawings of valve chambers, which are bound into the document, shall supersede the corresponding drawings in the standard specification.

Valve chambers, to the relevant specified sizes and specifications, shall be installed at all the new positions as indicated on the detailed drawings.

PSL 2.7 CLEANING OF PIPE

Sub clauses (a), (b) and (c) must be adhered to.

PSL 2.8 PIPE MARKERS

Pipe markers shall be installed at 50m intervals on the pipeline route, at all the newly installed isolation and scour valves as indicated on the detailed drawings as well as at all positions where the pipeline route deviates from the horizontal.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

2

Witness:



PSL 3 TESTING (Clause 7)

PS L 3.1 GENERAL

ADD THE FOLLOWING SUB-CLAUSES:

PS L 3.1.1 Inspection (Additional Clause 7.1.1 under 7.1)

The Contractor shall be responsible for supplying pipes and specials which comply with the specification in every way and he shall arrange for such inspection of his own work as well as work done by others as may be necessary to ensure this.

All welded steel items shall receive a 100% visual inspection of all welds after they have been cleaned and all visible defects shall be rectified.

The Employer reserves the right to appoint suitable qualified inspectors to inspect all stages of the manufacturing process in the Contractor's workshop and in those of his suppliers, on either a part time or a full time basis. The Contractor shall have no claim for moderate inconvenience due to the inspection procedure.

PS L 3.1.2 Standard of Acceptance (Additional Clause 7.1.2 under 7.1)

The Standard of acceptance of welding shall be laid down in API 1104: Standard for welding pipe lines and related facilities, for API 5L line pipe.

PS L 3.1.3 Marking (Additional Clause 7.1.3 under 7.1)

All individual pipe fittings and pipe specials shall be clearly marked with the appropriate reference numbers for identifying purposes. Reference numbers shall be legibly painted and also stamped on the one end of each pipework item.

The position of a weld test shall be clearly recorded and related to a pipe number.

PS L 3.2 INITIAL TESTS ON WELDING STEEL PIPES

PS L 3.2.1 Dye-Penetrant Test

ADD THE FOLLOWING TO THIS SUB-CLAUSE:

The Contractor shall perform non-destructive testing on complete welds being not less than 10% of the total welding performed, in addition to every weld for steel specials.

BIDDER:

DR. JSMLM:

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Witness:



PS L 3.2.4 Paraffin Test (Additional Clause after 7.2.2)

All fabricated steel bends, fittings and specials which cannot readily be pressured tested in the works shall receive a paraffin test on all welds to ensure that they are completely watertight. Alternatively, other liquid penetrants may be used.

PS L 3.2.5 Destructive Tests (Additional Clause after 7.2.2)

The Engineer receives the right to call on the Contractor to perform destructive tests such as transverse tensile, root bend and flatter tests on test specimens cut from the pipes.

Separate payment will be made for such tests if they are called for, but the Contractor shall accept that the cutting out of a specimen and its testing may cause a moderate disruption of his work.

PSL 3.3 STANDARD HYDRAULIC PIPE TEST (Subclause 7.3.1)

PSL 3.3.1 Test pressure and time of test

Add the following to L 7.3.1.1:

Pipes shall not be tested against isolating valves. Special blank flanges or end caps, fully anchored, shall be provided for testing.

PSL 4 MEASUREMENT AND PAYMENT (Clause 8)

PSL 4.1 SCHEDULED ITEMS

PSL 4.1.1 Supply, Lay and Bed Pipes complete with couplingsUnit: m

PSL 4.1.1.1 HDPE Class 16 pipes

The pipes should be the type with a spigot at one end and a socket with tying rubber at the other. All pipes to have the class and diameter clearly marked, in addition to Manufacturer's details.

PSL 4.2.1.2 Steel Pipes

The pipes should be threaded at both ends and supplied fitted with one threaded socket. The pipes will thus be jointed using threaded sockets except on advice of Engineer or where drawings details indicate otherwise.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



PSL 4.2.2 Extra-over 8.2.1 for the Supplying, Laying, and Bedding of Specials Complete with Couplings.....Unit: No

These shall be measured and paid for per installation, complete with the inclusion of the cutting of pipes, couplings, extra excavation and all extra material and labour that is required, including tees, fittings complete as shown on the drawings.

PSL 4.2.2.1 Extra-over 8.2.1.1 for the Supplying, Laying, and Bedding of Specials Complete with Couplings for Steel pipes and adaptors to HDPE

Bends, Tees and Reducers shall be steel, be flanged and drilled to Table 16 at all ends. End caps to be flanged at the open end. Bends to be long radius. Steel - HDPE Adaptors to be flanged at end linking to the steel pipe and spigot ended at end linking the HDPE pipe. The spigot end to match the diameter of PVC piping. Separate flanges to be drilled to Table 16 with threading to match the steel pipe threading.

PSL 4.2.2.2 Extra-over 8.2.1.2 for the Supplying, Laying, and Bedding of Specials Complete with Couplings for HDPE pipes

All bends, reducers, tees, end caps etc for HDPE sections to be HDPE, unless indicated on the drawings. All bends to be long radius with one end socketed and the other spigot end. The rest of the fittings/ specials to be socketed at all ends, unless the drawings or Engineer suggests otherwise.

PSL 4.2.3 Extra-over 8.2.1 for the Supply, Fixing and Bedding of ValvesUnit: No

Add the following to L 8.2.3:

Valves are measured and paid for per installation, complete with the inclusion of the cutting of pipes, couplings, extra excavation and all extra material and labour that is required, including tees, fittings complete as shown on the drawings.

PSL 4.2.4 Cut into and Connect to Existing Mains.....Unit: No

The number of each type and diameter of pipe cut into shall measure the cutting into existing mains.

The Tendered rate shall include full compensation for all arrangements with the relevant authorities, isolating the main, cutting into the main to accommodate the connecting fitting, dewatering, excavating, removing of excess material, taking steps to prevent the ingress of soil, stones and other material into the main as well as all material and labour to connect the pipe.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1.

Initial: DR. JSM

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Witness:



PSLB BEDDING (Pipes)

Add the following to LB 1.1:
 This specification also covers the bedding required for sleeve pipes.

PSLB 1 MATERIALS (Clause 3)

PS LB 1.1 SELECTED GRANULAR MATERIAL

Substitute LB 3.1 with the following:

Selected granular material shall be an aggregate, sand or granular material, all of a non-cohesive nature and free from any organic material, of which the grading analysis shows 100 % passing a 13, 2 mm sieve and not more than 5 % passing a 0,075 mm sieve.

Only if approved by the Engineer may sand from the trench excavations be used as selected material

PS LB 1.2 SELECTED FILL MATERIAL

Substitute LB 3.2 with the following:

The requirements of PS LB 3.1 shall apply mutatis mutandis.

PS LB 1.3 BEDDING

Add the following to LB 3.3:

All pipes shall be classified as flexible pipes and shall have a bedding of selected granular material and selected fill material.

PS LB 1.4 SELECTION

PS LB 1.4.1 Suitable Material from Trench Excavation Available

Replace the first sentence of LB 3.4.1 with the following:

Notwithstanding the requirements DB 3.7 and LB 3.4.1 relating selected excavation methods, the Contractor must follow selected excavation methods and provide or use plant that will prevent material that is suitable and necessary for bedding being contaminated.

BIDDER:

DR. JSMLM:

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2

Witness:



PSLB 1.5 SUITABLE MATERIAL NOT AVAILABLE FROM TRENCH EXCAVATIONS (Subclause 3.4.2)

Change the free haul distance in this subclause from 0,5 km to 2,0 km.

PSLB 2 MEASUREMENT AND PAYMENT

PSLB 2.1 FREEHAUL (Subclause 8.1.6)

PS LB 2.2 PRINCIPLES

PS LB 2.2.1 Provision of Bedding from Trench Excavation

a) Selected granular materialUnit: m³

b) Selected fill material Unit: m

The rates shall cover the cost of acquiring, from within 0,5 km, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material within a free haul distance of 0,5 km.

In terms of the standardized specifications covering pipelines, the rate for the supply and laying of pipelines covers the cost of handling bedding material from alongside the trench and placing it under and around the pipeline

PSLB 2.2.2 Supply only of Bedding by Importation

From other necessary excavations

a) Selected granular materialUnit: m

b) Selected fill material Unit: m

PSLB 2.2.3 From commercial sources

a) Selected granular material Unit: m

b) Selected fill material Unit: m

The rate shall cover the cost of acquiring, regardless of distance, the required bedding from commercial sources (see Subclause 8.3.4 of SANS 1200 D or Subclause 8.3.4 of SANS 1200 DA, as relevant), of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of material displaced by such importation, within a free haul distance of 0,5 km.

BIDDER:

DR. JSMLM:

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Witness:



PSLB 2.2.4 Encasing of Pipes in Concrete Unit:

Separate items will be scheduled for each size of pipe and for each grade of concrete specified.

The volume will be computed from the dimensions of the concrete as given on the drawing.

The rate shall cover the cost of dealing with any excavation (in all materials including disposal of surplus) that is additional to that measured under the item for pipe trench excavation, the cost of encasing the pipe in concrete including the cost of formwork (if any), etc., and the cost of formwork to form flexible joints at 4 m centres.

PS LB 2.2.5 Overhaul of material for Bedding cradle and selected fill blanket Unit: m³.km

Substitute LB 8.2.5 with the following:

- a) Limited overhaul (0,5 km to 1,0 km) Unit: m³
- b) Long overhaul Unit: m³.km

Except that the volume is calculated according to LB 8.1.3, the requirements of D 8.3.6 or DA 8.3.3, as applicable, shall apply for overhaul.

SANS 1200 GA: CONCRETE (SMALL WORKS)

This specification covers the requirements for concrete (plain and reinforced) for small works associated with pipelines, roads, railways, pump stations, etc. It covers the basic materials, the plant and formwork required, the quality, manufacture, and curing of concrete, tolerances in workmanship, testing, and the methods by which the finished structure is to be measured for the purposes of payment

PSGA 1 MATERIAL

PSGA 1.1.1 Applicable Specifications

Add the following to G 3.2.1:

Portland cement that conforms to SANS 471

PSGA 1.1.2 Storage of Cement

Add the following to G 3.2.2:

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1.

Initial: DR. JSM 2

Witness:



Consignments of cement shall be used in the same sequence as that in which they are delivered to site. No cement shall be used which has been stored on site for a longer period than 6 (six) weeks. All cement so stored for a longer period than 6 (six) weeks, all cement damaged in any way, and all cement which does not comply with the specification, shall be removed immediately and permanently from the site.

PSGA 2 PLANT

PSGA 2.1 Formwork

PSGA 2.1.1 Ties

Add the following to G 4.4.3:

No ties will be allowed in vertical walls and permanent metal ties shall have a minimum concrete cover of 40 mm. Tie holes shall be filled with an approved non-shrink epoxy grout.

PSGA 3 CONSTRUCTION

PSGA 3.1 REINFORCEMENT

PSGA 3.1.2 Cover

Substitute G 5.1.3 with the following:

The cover of concrete over reinforcement, unless otherwise indicated on the drawings, shall be not less than 40 mm.

PSGA 3.3 FORMWORK

PSGA 3.3.1 Classification of Finishes

Add the following to G 5.2.1:

The following surface conditions are required in the various portions of the finished concrete:

(a) Rough

Concealed surfaces and surfaces lower than 100 mm below finished ground level.

(b) Smooth

All surface finishes not classified as "rough" in paragraph (a) shall be classified as "smooth". All exposed edges unless otherwise indicated on the drawings, shall be chamfered 20 mm x 20 mm by means of triangular fillets fixed to the formwork.

BIDDER:

DR. JSMLM:

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Witness:



PSGA 3.4 CONCRETE

PSGA 3.4.1 Quality

PSGA 5.4.1.2 Consistency

Add the following to sub clause G 5.5.1.2(a):

The slump of concrete used in water retaining structures may not be less than 30mm and not more than 60mm.

PSGA 3.4.1.2 Strength concrete

Add the following to G 5.5.1.7:

The grade of strength concrete and the maximum nominal size of coarse aggregate for each portion of the works, unless otherwise indicated on the drawings, shall be as follows:

- | | |
|---|--------------|
| (a) Blinding layers and encasing of pipes | 15 MPa/19 mm |
| (b) Benching | 25 MPa/19 mm |
| (c) Screeds | 25 MPa/10 mm |
| (d) Reinforced concrete | 35 MPa/19 mm |

PSGA 3.4.1.3 Durability

Concrete shall be so proportioned to ensure that the water/cement ratio does not exceed 0,5 and, to ensure workability, water-reducing admixtures of approved manufacture shall be used in preference to increasing the cement content.

PSGA 3.4.2 Concrete Surfaces

Add the following to GA 5.4.8.1:

Concrete surfaces under screeds, granolithic finishes or benching shall be brought up to a plane, uniform surface with a suitable screed board.

PSGA 3.4.3 Construction Joints

The use of construction joints must be minimised and may only be placed as shown on the drawings or at positions as approved by the Engineer. At all construction joints in walls a PVC water stop without a centre bulb must be placed as shown on the drawings. Alternative materials with similar properties may be proposed but may only be installed after approval of the Engineer.

BIDDER:

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Witness:



PSGA 3.4.4 Wood-floated finish

Where wood floating is specified or scheduled, the surface shall first be given a finish as specified in G 5.5.10.1 and after the concrete has hardened sufficiently; it shall be floated to a uniform surface free from trowel marks. The screed surface shall be wood-floated, either by hand or machine, only sufficiently to produce a uniform surface free from screed marks.

PSGA 3.4.5 Steel-floated finish

Where steel floating is specified or scheduled, the surface shall be treated as specified in PS G 5.5.10.4 except that, when the moisture film has disappeared and the concrete has hardened sufficiently to prevent laitance from being worked to the surface, the screed surface shall be steel-trowelled under firm pressure to produce a dense, smooth, uniform surface free from trowel marks.

PSGA 4 Measurements and Payment (Clause 8)

PSGA 8.1.1 Formwork

Formwork, other than formwork covered by 8.1.1.2 and 8.1.4, will be measured as the net area of the face of the concrete to be supported during the deposition of concrete. No deduction will be made for fillets and splays of size up to 50 mm x 50 mm or for openings of diameter up to 0,7 m or of area up to 0.5 m².

Formwork in continuous lengths of narrow widths and of fillets or splays over 20 mm x 20 mm will be measured by length, the width or range of widths being stated in the schedule. Boxing-out, the forming of holes, and other such operations will be measured by number, basic dimensions, perimeters, or drawing references, as stated in the schedule.

The unit rate shall cover the cost of all parts of formwork in contact with the concrete, and the necessary bearers, struts, and other supports, plus the labour and plant necessary to erect and strike such formwork.

PSGA 8.1.2 Reinforcement

Steel for normal reinforced concrete will be measured net by mass of all bars, including supporting steel detailed on the reinforcing schedules. The mass will be computed from the nominal bar size and nominal mass per unit length. No allowance will be made for cutting, waste, spacer devices (materials other than steel bars), or binding wire.

Steel reinforcement for precast concrete units will not be measured unless so scheduled (see 8.6). Welded mesh will be measured by area as shown on the drawings, no allowance being made for cutting, waste, laps, or deductions for end cover. The areas measured will be those of the concrete floor or slab being reinforced by means of mesh. In the case of continuous unit partly reinforced by mesh, the area will be computed from the outside dimensions of the area covered by mesh regardless

BIDDER:

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Witness:



of whether or not additional reinforcing steel is present in the same area. Steel off cuts resulting from the cutting and bending of reinforcement in accordance with the bending schedules shall be deemed to be the property of the Contractor.

PSGA 8.1.3 Concrete

a) Concrete will be measured net to the dimensions shown on the drawings or to the dimensions cast, whichever are the smaller. Structural elements that are undersized will be measured for payment only if they are accepted by the Engineer

b) No allowance will be made for concrete required to make up overbreak in soft excavation, but payment will be made for additional concrete or formwork, or both, ordered in writing by the Engineer to replace unsuitable material or overbreak in hard rock or in intermediate excavation.

The unit rates shall cover the cost of the provision of concrete (made with ordinary portland cement unless otherwise scheduled), mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking of for levelling as applicable, and curing and repairing where necessary, together with the cost of all parts of formwork in contact with the concrete and the necessary bearers, struts, and other supports, plus the layout and plant necessary to erect and strike such formwork.

PSE.11. MANUALS

PSE.11.1 Three complete sets of maintenance and operator manuals shall be supplied at first handover.

PSE.11.2 The manual shall include at least the following for all the equipment:

- Sales pamphlets
- Full technical information
- Connection diagrams
- As built drawings
- Calibration and commissioning information.

PSE.12. DRAWINGS

PSE.12.1 Workshop drawings shall be submitted to the engineer for approval before any manufacturing commences.

PARTICULAR SPECIFICATIONS

PSE.13. QUALITY OF MATERIAL

PSE.13.1 Only new material and equipment of the highest quality will be accepted.

BIDDER:

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Witness:



C3.4.1.2 Particular Specifications

The following Particular Specifications for work not covered by the SABS 1200 Standardized Specifications are also included hereunder:

PC TRIMMING OF SITE

PC1 SCOPE

This work shall consist of the finishing of the entire site affected by the Contractor's operations before the issue of the Completion Certificate.

PC2 REQUIREMENTS

After completion of the work covered by this Contract, the entire area affected by the Contractor's operations shall be finished off and cleared up and all loose rock shall be removed, if required, and disposed of as directed by the Engineer.

Under no circumstances shall the Contractor use machines for trimming.

All loose stones, roots or other waste matter exposed on fill or excavation slopes, which are liable to become loosened shall be removed and all debris and muck from clearing operations shall be disposed of and the area affected by the Contractor's operations and all camp sites left in a neat and presentable manner.

All false work, temporary supports and structures, casting yards or platforms and equipment shall be removed from the site and from all ground occupied by the Contractor in connection with the work. All parts of the work and adjacent ground shall be left in a neat and presentable condition, all to the satisfaction of the Engineer.

PC3 MEASUREMENT AND PAYMENT

Measurement and payment for complying with the above requirements will not be made separately, and would be regarded as being provided for in full by relevant payment items under 1200 A - General.

BIDDER:

DR. JSMLM:

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Witness:



PD MAINTENANCE

PD1 MAINTENANCE DURING CONSTRUCTION

From the time of taking over the site by the Contractor, as set out in the Special Conditions of Contract until the acceptance of the work and the issue of the Completion Certificate, the Contractor shall be responsible for the maintenance of the work and shall rebuild, repair, restore and make good at his own expense all injuries or damages to any portion thereof whether occasioned by the action of the elements or any other cause.

PD2 MAINTENANCE OF COMPLETED WORK

Periods of Maintenance

The periods of maintenance for each completed section of work shall extend for twelve months from the time of acceptance of the work and the issue of the relevant Completion Certificate for that section of the work as the case may be as set out in Clause 5.3 of the General Conditions of Contract.

PD2.1 Work during Period of Maintenance

The Contractor shall be responsible for the repair at his own expense, of all defects in any of the works constructed by him, or affected by him during construction, all in terms of Clause 53 of the General Conditions of Contract.

PD3 MEASUREMENT AND PAYMENT

Measurement and payment for maintenance as described above shall be deemed to be included in the prices tendered and paid for the various items for which payment is made in terms of this Contract and such prices shall be full compensation for the supply of all supervision, labour, materials, equipment, plant and work necessary for the maintenance thereof.

The retention monies as set out in the General Conditions of Contract, Clause 49 (3) shall be released only upon Final Settlement of the Contract as set out in Clause 52 of the General Conditions of Contract

BIDDER:

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Witness:



PE CONTINGENCIES

PE1 CONTINGENCIES

An amount to be spent in part or in whole at the complete discretion of the Engineer. This amount shall not form part of the 15% as is defined in Clause 50 of the General Conditions of Contract.

PLI: Particular Specification for Generic Labour-intensive Specification

PLI: PARTICULAR SPECIFICATION FOR GENERIC LABOUR-INTENSIVE SPECIFICATION

B 1231 LABOUR BASED CONSTRUCTION METHODS

Bidders must take into consideration that the following works may only be constructed using labour-based construction methods:

- a) Excavation to expose existing services.
- b) Preparation of bedding material for water pipes.

Where Bidders propose to use additional labour-based methods, the methods must be stated as well as the activities. It will reflect positively on the Bidder's bid if he should use more labour-based methods.

PLI 1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- (a) trenches having a depth of less than 1,5 metres

PLI 2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

PLI 3 Hand excavatable material

Hand excavatable material is material:

(a) Granular materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or
- (ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100 mm.

(b) Cohesive materials:

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



- (i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- (ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

Note: (1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.

(2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

Granular materials		Cohesive materials	
Consistency	Description	Consistency	Description
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30 - 40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

PLI 4 Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1.

Initial: DR. JSM 2

Witness:



PLI 5 Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100 mm. Each layer shall be compacted using hand stampers

- (a) to 90% Proctor density;
- (b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10 mm and contains no isolated boulders, or
- (c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

PLI 6 Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

PLI 7 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

PLI 8 Shaping

All shaping shall be undertaken by hand.

PLI 9 Loading

All loading shall be done by hand, regardless of the method of haulage.

PLI 10 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

PLI 11 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

PLI 12 Spreading

All material shall be spread by hand.

PLI 13 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



PLI 16 Manufactured elements

Elements manufactured or designed by the contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320 kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

SCHEDULES OF QUANTITIES

Note: *Labour-intensive works must be highlighted in the schedules/bills of quantities for the payment items relating to labour-intensive works.*

The following wording, as appropriate, may be included in the preamble or pricing instructions to the schedules/bills of quantities in the contract with the contractor:

- 1 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column filled in against every item so designated. 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. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification in the Scope of Works.
- 2 Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) 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 labour-intensively will not be condoned and any works so constructed will not be certified for payment.

The following payment items should be included in the bill of quantities:

Training allowance paid to targeted labour in terms of formal training

Extra over for the administration of payment of training allowances to targeted labour

Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the site.
 (Provisional sum)

Person days

Person days

Sum
 (insert quantity)

(as above)

(insert provisional sum)

BIDDER:

DR. JSMLM:

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Witness:



(insert specified day rate)

C3.5 MANAGEMENT OF THE WORKS

C3.5.1 GENERIC SPECIFICATIONS

The SABS 1200 Standardized Specifications listed in 4.1.1 are applicable.

C3.6 HEALTH AND SAFETY

C3.7 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE ENVIRONMENTAL MANAGEMENT PLAN

BIDDER:

DR. JSMLM:

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Witness:



HEALTH AND SAFETY SPECIFICATION

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Occupational health and safety specification for the CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

1. Definitions

In this document the following expressions shall bear the meanings assigned to them below:

- 1.1 **Client** means any person for whom construction work is being performed and/or undertaken [i.e. JS Moroka Local Municipality for purposes of this specification];
- 1.2 **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993, Construction Regulations that came into effect on 18 July 2003;
- 1.3 **Occupational health and safety plan** means a documented plan which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;
- 1.4 **Occupational health and safety specification** means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working and/or visiting the site;
- 1.5 **OHSACT** means the Occupational Health and Safety Act, No 85 of 1993, as amended; and
- 1.6 **Principal Contractor** means an employer, as defined by section 1 of the OHSACT who performs construction work and is appointed by the Client to be in overall control and management of the construction works.

2. Introduction

In terms of Construction Regulation 4 (1) (a) of the OHSACT, the Client is required to compile an occupational health and safety specification for any intended project and provide such specification to prospective tenderers.

This specification has as objective to ensure that the principle contractor entering into a contract with the Client achieves and maintain an acceptable level of occupational health and safety performance. This document forms an integral part of the contract and the principle- and other contractors should make it part of any contract/s that they may have with other contractors and/or suppliers as far as this project is concerned.

Compliance with this document does not absolve the principle contractor from complying with any other minimum legal requirements and the principle contractor remains responsible for the health and safety of his employees, those of his mandataries as well as any persons on adjacent properties.

3. Scope

To develop a project specific occupational health and safety specification that addresses the reasonable and foreseeable risks, exposures and aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that the principle contractors and other contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work and that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

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Any contractor interested in submitting a tender in response to the Client's formal tender for any construction project, has to prepare and include a draft occupational health and safety plan based on this specification and the OHSACT in its tender submission. The Client will evaluate this plan as part of its formal tender adjudication processes to ensure compliance with Construction Regulation 4 that stipulates that the Client may only appoint a contractor who has the necessary competencies and resources to carry of the work appointed for safely.

4. General occupational health and safety provisions

4.1 Hazard identification and risk assessment (Construction Regulation 7)

4.1.1 Risk assessments

Annexure 7 of this specification contains a list of risk assessment headings that have been identified by the Client as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is only offered as assistance to the contractors intending to tender for the applicable works.

4.1.2 Development of risk assessments

Every principle contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 5 (1).

The risk assessments shall include, at least:

- The identification of the current as well as emerging risks and hazards to which persons may be exposed to;
- The analysis and evaluation of the risks and hazards identified;
- A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;
- A plan to monitor the application of the SWPs; and
- A plan to review the risk assessments as the work progresses and changes are introduced.

Based on the risk assessments, the principal contractor must develop a set of site-specific occupational health and safety rules that will be applied to regulate the occupational health and safety aspects of the construction.

The risk assessments, together with the site-specific occupational health and safety rules, must be submitted to the Client before mobilisation on site commences.

Despite the risk assessments listed in Annexure 7, the principal contractor is required to conduct a baseline risk assessment and the aforesaid risk assessments must be incorporated into the baseline risk assessment. The baseline risk assessment must further include the SWPs and the applicable method statements based on the risk assessments.

Hazard identification and risk assessments must be undertaken whilst SWPs must be developed for all out-of-scope work.

4.1.3 Review of risk assessments

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The principal contractor is to review the hazards identified, the risk assessments and the SWPs at each production planning and progress report meeting as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes.

The principal contractor must provide the Client, other contractors and all other concerned or affected parties with copies of any changes, alterations or amendments as soon as possible but within 14 days of such changes.

4.2 Legal Requirements

All Contractors entering into a contract with the Client shall, as a minimum, comply with the -

- OHSACT and a current, up-to-date copy of the OHSACT and its Regulations must be available on site at all times;
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COIDA). The principle contractor will be required to submit a letter of registration and "good-standing" from the Compensation Commissioner or compensation insurer before being awarded the contract. A current, up-to-date copy of the COIDA must be available on site at all times; and
- Where work is being carried out on mine premises, the contractor will comply with the Mine Health and Safety Act and Regulations (Act. 29 of 1996), the Minerals Act and Regulations (Act 50 of 1991) and any other occupational health and safety requirements that the mine may specify. Current, up-to-date copies of the last two mentioned Acts must be available on site at all times.

4.3 Structure and responsibilities

4.3.1 Overall supervision and responsibility for occupational health and safety

- a. The principal contractor [appointed in terms of Construction Regulation 4(1) (c)] is responsible to implement and maintain the occupational health and safety plan approved by the Client.
- b. The Chief Executive Officer (in terms of Section 16(1) of the OHSACT) of the principal contractor is to ensure that the Employer (as defined in the OHSACT) complies with the OHSACT. Annexure 2 "Legal Compliance Checklist" may be used for this purpose.
- c. The principal contractor's Chief Executive Officer may appoint any person reporting to him/her as Designated Person in terms of Section 16(2) of the OHSACT. Such Designated Person is responsible to assist the Chief Executive Officer to ensure that the Employer complies with the requirements of the OHSACT.
- d. The construction supervisor and assistant construction supervisor(s) appointed in terms of Construction Regulation 6 are responsible for supervising the construction work and in specific to ensure that all work undertaken comply with the requirements of the OHSACT, its Regulations and the Client's specifications.

4.3.2 Operational responsibilities for occupational health and safety

The principal contractor shall appoint designated competent employees and/or other competent persons as outlined in the following list to assist with the operational responsibilities for occupational health and safety: This list is only the minimum requirement and is therefore in no way exhaustive.

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Appointment description	Appointment required in terms of
Blasting supervisor	Explosives Regulation 12
Construction vehicle, mobile plant and machinery supervisor	Construction Regulation 21
Construction supervisor	Construction Regulation 6(1)
Drivers of construction vehicles and operators or plant	Construction Regulation 21
Electrical installation and appliances inspector	Construction Regulation 22
Emergency, security and fire coordinator	Construction Regulation 27
Excavation supervisor (including piling)	Construction Regulation 11
First-aiders	General Safety Regulation 3
Fire fighting equipment inspector	Construction Regulation 27
Formwork and support work supervisor	Construction Regulation 10
Hazardous chemical substances supervisor	Hazardous Chemicals Substances Regulations 10
Incident investigator	General Administrative Regulation 9
Ladder inspector	General Safety Regulation 13(a)
Lifting machines and equipment inspector	Construction Regulation 20
Occupational health and safety committee	OHSACT Section 19
Occupational health and safety officer	Construction Regulation 6(6)
Occupational health and safety representatives	OHSACT Section 17
Person responsible for machinery	General Machinery Regulation 2
Risk assessor	Construction Regulation 7(1)
Scaffolding supervisor	Construction Regulation 14
Stacking and storage supervisor	Construction Regulation 26
Structures supervisor	Construction Regulation 9
Traffic management supervisor	OHSACT Section 9(1)
Traffic safety officer	OHSACT Section 9(1)
Tunnelling supervisor	Construction Regulation 13
Vessels under pressure supervisor	Vessels under Pressure Regulations
Working on, over or next to water supervisor	Construction Regulation 24
Welding supervisor	General Safety Regulation 9

These appointments must be in writing and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with the appointees.

Copies of appointments must be submitted to the Client together with concise CV's of the appointees as part of the principal contractor's health and safety plan and if appointed copies of the appointments included in the occupational health and safety file. All appointments must be approved by the Client and any changes in appointees or appointments must be communicated to the Client and agreed upon before being implemented.

The principle contractor must, furthermore provide the Client with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

4.3.3 Designation of occupational health and safety representatives (Section 18 of the OHSACT)

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Where the principal contractor employs more that 20 persons [including the employees of other contractors (sub-contractors)] he has to appoint one occupational health and safety representative for every 50 employees or part thereof. General Administrative Regulation 6 requires that the election, appointment and subsequent designation of the occupational health and safety representatives be executed in consultation with employee representatives or employees. (Section 17 of the OHSACT as well as General Administrative Regulation 6 and 7).

Occupational health and safety representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

4.3.4 Duties and functions of the occupational health and safety representatives (Section 19 of the OHSACT)

- a. The principal contractor must ensure that the designated occupational health and safety representatives conduct a weekly inspection of their respective areas of responsibility, using a checklist, and report thereon to the principal contractor.
- b. Occupational health and safety representatives must be included in accident and/or incident investigations.
- c. Occupational health and safety representatives must attend all occupational health and safety committee meetings.

4.3.5 Appointment of occupational health and safety committee (Section 20 of the OHSACT)

The principal contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives together with a number of management representatives that are not allowed to exceed the number of occupational health and safety representatives on the committee and a representative of the Client who shall act as the chairperson without voting rights. The members of the occupational health and safety committee must be appointed in writing and copies of the appointments included in the occupational health and safety file.

The occupational health and safety committee must meet as a minimum on a monthly basis and consider, at least, the following agenda items:

1. Opening and welcome.
2. Members present, apologies and absent.
3. Minutes of previous meeting.
4. Matters arising from the previous meeting.
5. Occupational health and safety representatives' reports.
6. Incident and/or accident reports and investigations.
7. Incident, accident and/or injury statistics.
8. Other matters.
9. Endorsement of registers and other statutory documents by a duly authorised representative of the principal contractor.
10. Close and next meeting.

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4.4 Mandataries

It is a requirement that the principal contractor, when he appoints contractors or sub-contractors in terms of Construction Regulations 5(3), 5(5), 5(9), 5(10) and 5(12), includes an OHSACT Section 37(2) agreement (i.e. Agreement with Mandatary) in his agreement with such contractor.

4.5 Administration controls and the occupational health and safety file

4.5.1 The occupational health and safety file [Construction Regulation 5(7)]

As required by Construction Regulation 5(7), the principle contractor and other contractors will each keep an occupational health and safety file on site containing the following documents as a minimum:

1. Notification of construction work (Construction Regulation 3.).
2. Updated copy of the OHSACT and its Regulations (General Administrative Regulation 4.).
3. Proof of registration and good standing with the Compensation Commissioner or a COID Insurer [Construction Regulation 4(g)].
4. Occupational health and safety plan agreed with the Client including the underpinning risk assessment(s) and method statements [Construction regulation 5(1)].
5. Copies of occupational health and safety committee meetings and other relevant minutes.
6. Designs and/or drawings [Construction Regulation 5(8)].
7. A list of contractors (sub-contractors) including copies of the agreements between the parties and the type of work being done by each contractor (Construction Regulation 9).
8. Appointment and designation forms as per paragraphs 4.3.1 and 4.3.2 above.
9. The following registers:
 - Accident and/or incident register (Annexure 1 of the General Administrative Regulations);
 - Occupational health and safety representative's inspection register;
 - Construction vehicles and mobile plant inspections by controller;
 - Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
 - Designer's inspections and structures record;
 - Inspection and maintenance of explosive powered tools;
 - Inspection of electrical installations (including inspection of portable electrical tools, electrical equipment and other electrical appliances);
 - Fall protection inspections.
 - First-aid box content;
 - Record of first aid treatment;
 - Fire equipment inspections and maintenance.
 - Record of hazardous chemical substances kept and used on site.
 - Ladder inspections.
 - Machine safety inspections (including machine guards, lockouts etcetera);
 - Inspection registers and logbooks for lifting machines and –tackle (including daily inspections by drivers/operators);
 - Inspection of scaffolding;
 - Inspection of stacking and storage;
 - Inspections of structures;
 - Vessels under pressure inspections; and

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- Inspection of welding equipment.
- 10. All other applicable records.
 The Client will conduct and evaluation of the principal contractor's occupational health and safety file from time to time.

4.6 Occupational health and safety goals and objectives and arrangements for monitoring and review of occupational health and safety performance

The principal contractor is required to maintain a casualty incident frequency rate (CIFR) of not more than four (See Annexure 3 to this document: "Measuring Injury Experience") and report on this to the Client on a monthly basis.

4.7 Notification of construction work (Construction Regulation 3)

The principle contractor must, where the contract meets the requirements laid down in Construction Regulation 3, within 5 working days, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure A in the Construction Regulations) for this purpose. A copy of the notification must be held on the occupational health and safety file and a copy must also be forwarded to the Client for record purposes.

4.8 Training, awareness, and competence

The contents and syllabi of all training required by the OHSACT and Regulations must be included in the principal contractor's occupational health and safety plan.

4.8.1 General induction training

All members of the contractor's site management as well as all the persons appointed as responsible for occupational health and safety in terms of the Construction and other Regulations will be required to attend a general induction session.

All employees of the principal and other contractors must be in possession of proof of general induction training.

4.8.2 Site-specific induction training

The principle contractor will be required to develop a contract work project specific induction training course based on the risk assessments for the contract work and train all employees and other contractors and their employees in this.

All employees of the principal and other contractors must always be in possession of proof that they have attended a site-specific occupational health and safety induction training.

4.8.3 Other training

1. All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training and where applicable licenses.
2. All employees in jobs requiring training in terms of the OHSACT and Regulations must be in possession of valid proof of training.
3. Occupational health and safety training requirements [as required by the Construction Regulations and as indicated by the occupational health and safety specification and the risk assessment(s)] i.e. –

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- a. General induction (Section 8 of the OHSACT);
- b. Site and job specific induction, including visitors (Sections 8 and 9 of the Act);
- c. Site and project manager;
- d. Construction supervisor;
- e. Occupational health and safety representatives [Section 18 (3) of the Act];
- f. Training of the appointees indicated in paragraphs 4.3.1 and 4.3.2;
- g. Operators and drivers of construction vehicles and mobile plant (Construction Regulation 21);
- h. Basic fire prevention and protection (Environmental Regulations 9 and Construction Regulation 27);
- i. Basic first-aid (General Safety Regulations 3);
- j. Storekeeping methods and safe stacking (Construction Regulation 26); and
- k. Emergency, security and fire coordinator.

4.8.4 Awareness and promotion

The principle contractor is required to have a promotion and awareness programme in place to create an occupational health and safety culture within employees. The following are some of the methods that may be used:

- Toolbox talks
- Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as employee "occupational health and safety circles".

4.8.5 Notices and signs

The following notices and signs are, where applicable, compulsory on the construction site as well as the contractors' yards:

Area and/or activity where notice or sign is required	Notice or sign required in terms of
Display of notices and signs	General Safety Regulation 2B and SABS Code 1186
Entry	General Safety Regulation 2C(2)
First-aid	General Safety Regulation 3(6)
Toilets and change rooms	Facilities Regulation 2 (5) 4(2)(f)
Storage of flammable materials	General Safety Regulation 4(8)(a)(i) and (ii) [10(e) only applicable to contractor's yards]
Grinding wheels	Driven Machinery Regulation 8(1)(7)
Machinery	General Machinery Regulation 9 (Schedule D)
Explosive powered tools	Construction Regulation 19(2)(f)
Prohibition on smoking and eating or drinking at the workplaces where high risk substances [FR5 (1)] are stored or handled	Facilities Regulation 6(b)

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Non-potable water

Facilities Regulation 7(B)

4.8.6 Competence

The principle contractor shall ensure that his and other contractors' employees appointed are competent and that all training required to do the work safely and without risk to health of their or other persons, has been successfully completed before work commences.

The principle contractor shall ensure that follow-up and refresher training is conducted on a regular basis as well as the contract work progresses, and the work situation changes.

Records of all training must be kept on the occupational health and safety file for auditing purposes.

4.9 Consultation, communication, and liaison

The following arrangements will apply-

- 4.9.1 Occupational health and safety liaison between the Client, the principal contractor, the other contractors, the designer and other concerned parties will be through the occupational health and safety committee. In the absence of a health and safety committee, the Client and principal contractor will agree on an alternative communication forum to be implemented.
- 4.9.2 In addition to the above, communication may be directly to the Client or his appointed Agent, verbally (followed up in writing within 14 days) or in writing, as and when the need arises.
- 4.9.3 Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.
- 4.9.4 The principal contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other contractors, for example design changes agreed with the Client and the designer, instructions by the Client and/or his agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etc.
- 4.9.5 The principle contractor will be required to do site safety walks with the Client and/or his agent on a basis to be determined and agreed between the parties.
- 4.9.6 The principle and other contractors will be required to conduct toolbox talks with their employees on a weekly basis and records of these must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file..7. The principle contractor's most senior manager on site will be required to attend all the Client's occupational health and safety meetings.

The Client or his agent and the principle contractor will agree of the dates, times and venues of the occupational health and safety meetings.

4.10 Checking, reporting and corrective actions

- 4.10.1 Monthly compliance assessment by Client [Construction Regulation 4(1)(d)

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The Client will be conducting a monthly assessment to comply with Construction Regulation 4(1)(d) and to confirm that the principal contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

4.10.2 Other assessments and inspections by the client

The Client reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include among others site safety walks.

4.10.3 Conducting an assessment

A representative of the principal contractor must accompany the Client on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection.

4.9.8

4.10.4 Contractor's assessments and inspections

The principle contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other contractors under his/her control.

4.10.5 Inspections by occupational health and safety representatives and other appointees

Occupational health and safety representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments for example vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

4.10.6 Recording and review of inspection results

All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

4.10.7 Reporting of inspection results

The principal contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 4: "Safety, Health and Environment Risk Management Report".

4.11 Incident reporting and investigation

4.11.1 Reporting of accidents and incidents (Section 24 and General Administrative Regulation 8 of the OHSACT)

The principal contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies
- becomes unconscious
- loses a limb or part of a limb

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- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

or where -

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled
- the uncontrolled release of any substance under pressure took place
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control

to the Client within two days and to the Provincial Director of the Department of Labour within seven days from date of incident (Section 24 of the OHSACT and General Administrative Regulation 8), except that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both the Client and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

The principal contractor is required to provide the Client with copies of all statutory reports required in terms of the OHSACT within 7 days of the incident occurring.

The principal contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports, including the reports contemplated in 4.11.2 (3) and (4) below, within 7 days of the incident occurring.

4.11.2 Accident and incident investigation (General Administrative Regulation 9)

1. The principal contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that he, she and/or they had to be referred for medical treatment by a doctor, hospital or clinic.
 2. The results of the investigation to be entered into the accident and/or incident register.
 3. The principal contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) and (c) of the OHSACT and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.
 4. The principal contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.
4. The Client reserves the right to hold its own investigation into an incident or call for an independent external investigation.

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5. Operational control

5.1 Emergency preparedness, contingency planning and response

- 5.1.1 The Contractor must appoint a competent person to act as emergency controller and/or coordinator.
- 5.1.2 The principle contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place.
- 5.1.3 The principle contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

5.2 First aid (General Safety Regulation 3)

- 5.2.1 The principle contractor must provide first-aid equipment (including a stretcher) and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSACT.
- 5.2.2 The contingency plan of the principle contractor must include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or of getting emergency medical aid to person(s) that may require it.
- 5.2.3 The principle contractor must have firm arrangements with his other contractors in place regarding the responsibility of the other contractors injured and/or ill employees.

5.3 Security

- 5.3.1 The principal contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include among others the rule that non-employees will not be allowed on site unaccompanied.
- 5.3.2 The principal contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

5.4 Structures (Construction Regulation 9)

The principle contractor must ensure that:

- 5.4.1 Only skilled employees are allowed to erect structures and that the skills of these employees are being verified at regular intervals.
- 5.4.2 Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it.
- 5.4.3 No structure is overloaded to the extent where it becomes unsafe.
- 5.4.4 He or she has received from the designer the following information:
 - Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work.

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- A geo-scientific report (where applicable).
- The loading the structure is designed to bear.
- The methods and sequence of the construction process.
- Any other applicable information.

5.4.5 All drawings pertaining to the design are on site and available for inspection.

5.5 Access scaffolding (Construction Regulation 14)

Access scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 14 and SA Bureau of Standards Code of Practice, SABS 085 entitled, "The Design, Erection, Use and Inspection of Access Scaffolding".

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly.

Scaffolding must be erected, altered or dismantled by person(s) who has/have adequate training and experience in this type of work or under the continuous supervision of such a person.

5.6 Lifting equipment (Construction Regulation 20)

Lifting equipment must be designed and constructed in accordance with the manufactures/designer's specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 18 of the OHSACT:

The Driven Machinery Regulation requires that:

- a. Lifting equipment be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator.
- b. Each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit.
- c. Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted.
- d. Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML.
- e. Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
 - chains – 4 (four)
 - steel wire ropes - 5 (five)
 - fibre ropes- 10 (ten)
- f. Every hook or load attaching device must be designed such or fitted with a device that will prevent the load from slipping off or disconnecting;
- g. Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturer's prescription or to 110% of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;

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- h. All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and
- i. No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour.

5.7 Lifting tackle

The following requirements will apply to lifting tackle:

- a. Manufactured of sound material, well constructed and free from patent defects;
- b. Clearly and conspicuously marked with an identity number;
- c. Maximum mass load factor of safety:
 - Natural fibre ropes - 10(ten)
 - Man-made fibre ropes and woven webbing - 06(six)
 - Steel wire ropes – single rope - 06(six)
 - Steel wire ropes – combination slings - 08(eight)
 - Mild Steel chains - 05(five)
 - High tensile/alloy steel chains - 04(four)
- d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.

5.8 Machine operators

The following requirements will apply to machine operators:

- a. Only certified and/or competent employees may be allowed to operate any machinery.
- b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.
- c. Operators of Jib cranes with a maximum mass load of 500 kg or more must be in possession of a certificate of training issued by an accredited (by the Department of Labour) training provider.

5.9 Construction vehicles and mobile plant (Construction Regulation 21)

Construction vehicles and mobile plant will initially during the competency evaluation process be inspected by the Client prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHSACT and Regulations.

Construction vehicles and mobile plant must be:

- a. Of acceptable design and construction;
- b. Maintained in good working order;
- c. Used in accordance with their design and intention for which they were designed;
- d. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;
- e. Provided with safe and suitable means of access;
- f. Fitted with adequate signalling devices to make movement safe including reversing;
- g. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into same;

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- h. Provided with roll-over protection;
- i. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book;
- j. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
- k. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

Operators and drivers of construction vehicles and mobile plant must be in possession of a valid medical certificate declaring the operator and/or driver physically and psychologically fit to operate or drive construction vehicles and mobile plant.

No loose tools, material etc. is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights, reflectors or barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.

In addition, construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

Employees employed adjacent or on public roads must wear reflective safety vests.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

5.10 Electrical installations (Construction Regulation 22)

The installation of temporary electricity for construction use shall be in accordance with Construction Regulation 22 and the Electrical Installation Regulations.

The principle contractor must ensure that:

- a. Existing services are be located and marked before construction commences and during the progress thereof;
- b. Where the abovementioned is not possible, employees with jackhammers etc. will be protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etc;
- c. Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;
- d. Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file;

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- e. Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and
- f. A competent person appointed in writing must control all temporary electrical installations.

5.11 Electrical and mechanical lockout

An electrical and mechanical lockout procedure must be developed by the principle contractor and submitted to the Client for approval before construction commences. All contractors on site must adhere to this lockout procedure.

5.12 Use and storage of flammables (Construction Regulation 23)

The principle contractor must ensure that:

- a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions is taken;
- b. No flammables is used or applied e.g. in spay painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation;
- c. The workplace is effectively ventilated. Where this cannot be achieved:
 - Employees must wear suitable respiratory equipment
 - No smoking or other sources of ignition is allowed in the area
 - The area is conspicuously demarcated as "flammable"
- d. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practiced for example proper housekeeping;
- e. Flammables stored in a permanent flammable store are stored so that no fire or explosion is caused i.e.:
 - Stored in a locked and well-ventilated reasonably fire-resistant container, cage or room conspicuously demarcated as "Flammable Store – No Smoking or Naked Lights"
 - The flammables store to be constructed of two-hour fire-retardant walls, door and roof and separated from adjoining rooms or workplaces by means of a two-hour fire-retardant fire wall
 - Adequate and suitable fire fighting equipment installed around the flammables store and marked with the prescribed signs
 - All electrical switches and fittings to be of a flameproof design
 - Any work done with tools in a flammable store or work areas to be of a non-sparking nature
 - No Class A combustibles such as paper, cardboard, wood, plastic, straw etcetera to be stored together with flammables
 - The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10% of the liquids stored
 - A sign indicating the capacity of the store to be displayed on the door
- f. Only one day's quantity of flammable is to be kept in the workplace;
- g. Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas;
- h. Metal containers to be bonded to earth whilst decanting to prevent build-up of static forces; and
- i. Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.

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5.13 Housekeeping (Construction Regulation 25)

The principle contractor must ensure that:

- a. Housekeeping is continuously implemented and maintained;
- b. Materials and equipment is properly stored;
- c. Scrap, waste and debris is removed regularly;
- d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
- e. Waste and debris not to be removed by throwing from heights but by chute or crane;
- f. Where practicable, construction sites are fenced off to prevent entry of unauthorised persons;
- g. Catch platforms or -nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects;
- h. An unimpeded work space is maintained for every employee;
- i. Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done;
- j. As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;
- k. The walls and roof of every indoor workplace be sound and leak-free; and
- l. Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling.

5.14 Stacking and storage (Construction Regulation 27)

The principle contractor must ensure that:

- a. A competent person is appointed in writing to supervise all stacking and storage on a construction site;
- b. Adequate storage areas are provided and demarcated;
- c. The storage areas are kept neat and under control;
- d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
- e. The items in the lower layers can support the weight exerted by the top layers;
- f. Cartons and other containers that may become unstable due to wet conditions are kept dry;
- g. Pallets and containers are in good condition and no material is allowed to spill out;
- h. The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang);
- i. The articles that make up a single tier are consistently of the same size, shape and mass;
- j. Structures for supporting stacks are structurally sound and able to support the mass of the stack;
- k. No articles are removed from the bottom of the stack first but from the top tier first;
- l. Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her;
- m. Stacks that are in danger of collapsing are broken down and restacked;
- n. Stability of stacks are not threatened by vehicles or other moving plant and machinery;
- o. Stacks are built in a header and stretcher fashion and that corners are securely bonded;

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- p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

5.15 Storage of flammable and hazardous chemicals (Hazardous Chemical Substances Regulations)

See paragraphs 5.16 and 5.21 below.

5.16 Fire prevention and protection

The principle contractor must ensure that:

- a. The risk of fire is avoided;
 - b. Sufficient and suitable storage of flammables is provided;
 - c. Sources of ignition is obviated wherever flammable or highly combustible material is present in the workplace, for example:
 - Notices prohibiting smoking is displayed and enforced
 - Welding and flame cutting is only allowed under controlled conditions that includes written hot work permits
 - Only spark-free hand and power tools are used
 - No grinding, cutting and shaping of ferrous metals are allowed using electrically driven power tools that produces sparks
 - Flameproof switches and fittings are to be used in the flammable atmosphere
 - Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles
 - Adequate ventilation is maintained
 - Adequate and suitable fixed and portable fire fighting equipment are provided and maintained in good working order.
 - d. Maintenance must include:
 - Regular inspections by a competent person appointed in writing and records of such inspections should be kept in the occupational health and safety file
 - Annual inspection and service by an accredited service provider
 - e. All employees are instructed in the use of the fire fighting equipment and know how to attempt to extinguish a fire;
 - f. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
- a. Employees are informed regarding emergency evacuation procedures and escape routes;
- b. Emergency escape routes are kept clear at all times and clearly marked;
- c. Evacuation assembly points are demarcated and made known to employees;
- d. Evacuation is practiced to ensure that all persons are evacuated timeously;
- e. Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors have been left behind; and
- f. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

5.17 Eating, changing, washing and toilet facilities (Construction Regulation 28)

5.17.1 Toilets

- a. The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 28.
- b. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees.

5.17.2 Showers

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At least cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.

5.17.3 Change rooms

Some form of screened off changing facility must be provided separately for each sex.

5.17.4 Eating facility

Some form of eating facility sheltered from the sun, wind and rain must be provided.

5.17.5 Living accommodation

Where the site is in a remote location and transport to home is not readily available, reasonable and suitable living accommodation must be provided.

5.18 Personal and other protective equipment (Sections 8, 15 and 23 of the OHSACT)

The principal contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.

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

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

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

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

The principal contractor may **not charge any fee** for protective equipment prescribed by him or her **but may charge for equipment under the following conditions:**

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has patently abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment.

5.19 Portable electrical tools and equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace i.e. drills,

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saws, grindstones, portable lights, etcetera. In addition, electrical appliances such as fridges, hotplates, heaters, etcetera must be inspected and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

This equipment -

- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

5.20 Public health and safety (Section 9 of the OHSACT)

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

- a. Non- employees entering the site for whatever reason;
- b. The surrounding community; and
- c. Passers by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.

5.21 Hazardous chemical substances

The principal contractor must ensure that:

- a. Employees receive the necessary information and training to be able to use and store hazardous chemical substances safely;
- b. Employees obey lawful instructions regarding:
 - The wearing and use of protective equipment
 - The use and storage of hazardous chemical substances
 - The prevention of the release of hazardous chemical substances
 - The wearing of exposure monitoring and measuring equipment
 - The cleaning up and disposal of materials containing hazardous chemical substances
 - Housekeeping, personal hygiene and the protection of the environment
- c. The risk assessments required in terms of Construction Regulation 7 include employee exposure to hazardous chemical substances and that the necessary

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- measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;
- d. Suppliers provide the necessary information in the form of a material safety data sheet regarding hazardous chemical substances required to ensure the safe use and storage of that substances;
- e. An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances;
- f. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the hazardous chemical substances on the list indicated above;
- g. Hazardous chemical substances for example asbestos dust is not cleared by using compressed air but should be vacuumed;
- h. No person eats or drinks in a hazardous chemical substances' workplace; and
- i. Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.

5.22 Excavations (Construction Regulation 11)

Where excavations or any part thereof will exceed 1,5 m in depth the principal contractor will be required to submit a method statement to the Client for approval before commencing with the excavation and the Client will issue a permit to proceed once the risk assessment and method statement is approved.

Regardless of the above, all excavation work has to comply with the following:

- 5.22.1 Excavation work must be carried out under the supervision of a competent person with at least two years practical experience in excavation work who has been appointed in writing.
- 5.22.2 Before excavation work begins the stability of the ground must be evaluated.
- 5.22.3 Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.
- 5.22.4 No person may be required or permitted to work in an excavation that has not been adequately shored or braced.
- 5.22.5 Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out **but only after** written permission has been obtained from the appointed competent person.
- 5.22.6 Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.
- 5.22.7 Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavator.
- 5.22.8 No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load.

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- 5.22.9 Neighbouring/adjoining buildings, structures or roads that may be affected or endangered by the excavation must be suitably protected.
- 5.22.10 Every excavation must be provided with means of access that must be within 6 metres of any employee within the excavation at any time.
- 5.22.11 The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation.
- 5.22.12 Every excavation, including the shoring and bracing or any other method to prevent collapse, must be inspected by the appointed competent person as follows:
- Daily before work commences
 - After every blasting operation
 - After an unexpected collapse of the excavation or part thereof
 - After substantial damage to any support
 - After rain
- 5.22.13 The results of any inspections must be recorded in a register kept on site.
- 5.22.14 Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off to at least one meter high and as close to the excavation perimeter as practicable.
- 5.22.15 Provided with warning lights or visible boundary indicators after dark or when visibility is poor.
- 5.22.16 Upon entering an excavation the requirements of General Safety Regulation 5 must be observed:
- Any confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable or noxious air mixture.
 - The confined space must be purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes.
 - The safe atmosphere must be maintained.
 - Employees are to be provided with breathing apparatus and wearing a safety harness with a rope with the free end of the rope being continuously attended to by a person outside the confined space.
 - Furthermore, an additional person, trained in resuscitation, to be in full-time attendance immediately outside the confined space.
 - Additional serviceable breathing and rescue apparatus is kept immediately outside the confined space for rescue purposes.
 - All pipes, ducts etcetera that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage.
 - The employer must ensure that all employees have left the confined space after the completion of work.
 - Where flammable gas is present on or in a confined space no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

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5.23 Tunneling activities

The principal contractor must ensure that:

- Tunneling activities are carried out under the supervision of a competent person with at least ten years practical experience in tunneling work who has been appointed in writing.
- All tunneling activities comply with the Tunneling Regulations as published under the Mine Health and Safety Act (No 29 of 1996), as amended.
- No person is allowed to enter a tunnel which has a height dimension of less than 800 mm.

5.24 Blasting

The principal contractor must ensure that:

- Blasting activities are carried out under the supervision of a competent person with at least five years practical experience in blasting who has been appointed in writing.
- A method statement is developed in accordance with all applicable explosives' legislation, by an appointed person who is competent in the use of explosives.
- The necessary permits are in place for the transportation of explosives to be used.
- Access to the blasting area is strictly restricted.
- No smoking or hot work is allowed close to explosives or the blasting areas.
- Reasonable steps are taken to prevent damage to structures in the vicinity of the blasting area.
- Any other industry required safety measures are considered and implemented specifically taking the construction site's specific requirements into account.

5.25 Working in confined spaces (such as manholes)

5.25.1 Ventilation

The confined space or manhole cover and two adjacent covers must be opened (i.e. a total of three manholes) and the confined space or manhole be allowed to ventilate for at least 15 minutes before entering the manhole. All open manholes must be barricaded and manned at all times.

A gas monitor must be lowered to the bottom of the confined space or manhole with a rope to test the presence of any toxic/flammable gas. If any gas is detected, the space or line must be force ventilated by means of a blower for at least 15 minutes where after the air must be tested again. Under no circumstances may any space or manhole be entered while there is a toxic/flammable gas present.

After the undertaking of the necessary work, the person in charge of the activities must confirm that all the employees are accounted for and ensure that all the manholes are properly closed and barricading removed.

5.25.2 Entering a manhole

When entering a confined space or manhole, the person entering the space or manhole must wear a safety harness, fully operational gas detector as well as a self-rescuer. A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the manhole. At least one person on the surface must be trained in basic first-aid (level 1).

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No person shall remain within a confined space or manhole for a period of more than one hour at a time. A minimum of 5-minute rest periods on the surface must be taken after this period before re-entering.

Should the alarm sound on the gas monitor, the employees must exit the confined space or manhole and the immediate area must also be evacuated immediately. The area must be properly ventilated and re-tested before re-entering the confined space or manhole. Professional support should be called for if necessary.

Employees must be provided with flameproof lighting when entering deep manholes or manholes with flammable gases. No naked lights, smoking or unprotected electrical apparatus which may cause sparks, shall be permitted in any manhole or confined space or in their vicinity.

5.25.3 General

All employees working in confined spaces or manholes must be issued with fully functioning gas monitoring equipment and safety harnesses as well as self-rescuers where applicable. All these employees must be trained (including refresher training on a continuous basis) in the use thereof.

Where over-pumping between manholes is involved, only leak free pumping machines and conveyance tubes must be used and allowed.

5.25.4 Safety equipment

All teams must be issued with fully functional gas monitoring equipment and safety harnesses and self-rescuers where applicable. All employees must be trained (including refresher training on a continuous basis) in the use thereof.

5.25.5 General records

The following records shall be implemented and maintained by the principal contractor:

- a. Confined space entry permits
- b. Confined space entry registers
- c. Safety harness registers

5.25.6 Training

- a. All employees that have to enter a confined space or manholes must be formally trained before being required to enter such areas (new employees to complete this training before working in a confined space).
- b. Refresher courses must be attended by employees at least every 2 years or immediately if new methodologies or equipment are adopted or acquired.
- c. Continuous on-site training and support by supervisory staff should be undertaken.

5.26 Working over or close to water

Where construction or other support work is undertaken over or in close proximity to water or similar liquids such as sludge, the principal contractor shall –

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- a. Appoint a competent person in writing to supervise, control and inspect any work on or over or in close proximity of the water as well as the construction, installation, and dismantling of caissons and/or cofferdams and/or other support or safety structures;
- b. Ensure that written proof of the competence of above appointee is available on site;
- c. Ensure that risk assessments are carried out by the competent person on a daily basis;
- d. Ensure that measures for the timeous warning of flooding are in place;
- e. Ensure that provision is made to prevent employees from falling into the water and the rescuing of employees in danger of drowning;
- f. Ensure that where an employee is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the employee; and
- g. Provide applicable personal protective equipment such as safety harnesses etcetera and enforce the utilisation thereof.

5.27 Form and support work

- a. Form and support work must be carried out under the supervision of competent person designated in writing.
- b. Form and support work structures must be so designed, erected, supported, braced and maintained that it will be able to support any vertical or lateral loads that may be applied.
- c. No load may be imposed onto the structure that the structure is not designed to carry.
- d. Form and support work must be erected in accordance with the structural design drawings for such form and support work and if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the form and support work.
- e. All drawings pertaining to the form and support work must be kept available on site.
- f. All equipment used in the erection of form and support work must be checked by a competent person before use.
- g. The foundation or base upon which the form and support work is erected must be able to bear the weight and keep the structure stable.
- h. Employees erecting form and support work must be trained in the safe work procedures for the erection, moving and dismantling of the form and support work.
- i. Safe access and emergency escape must be provided for employees.
- j. A competent person must inspect the form and support work structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the form and support work is stripped. The results of all inspections must be recorded in a register kept on site.
- k. The form and support work must be left in place until the designated competent person has authorised its stripping in writing.
- l. Any damaged form and support work must be repaired and/or rectified without delay.
- m. Deck panels must be secured against displacement.
- n. The slipping of employees and other persons on release agents on deck panels must be prevented at all times.
- o. Employees' health must be protected against the use of solvents, oils or other similar substances.

5.28 Welding, flame cutting or similar operations

- 5.28.1 A competent person will be appointed to supervise welding, flame cutting or similar operations on site.
- 5.28.2 The following rules will govern all welding and flame cutting or similar operations:
 - a. The welder will be trained regarding the safe use/operation of the equipment.

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- b. The welder and his assistant will be provided with effective and appropriate personal protective equipment and/or clothing.
- c. Cables and electrode holders will be effectively insulated.
- d. The workplace will be effectively screened off to prevent bystanders from being affected by the welding rays or they will be provided with protective equipment.
- e. Special precautions will be taken where welding is undertaken in confined spaces e.g. proper and sufficient ventilation will be provided.
- f. In wet or damp conditions, the welding equipment and the welder will be properly insulated and someone will be on standby to assist in the event of any emergency.
- g. A qualified person will certify in writing that it is safe to enter and work in a specific confined space before welding or flame cutting is undertaken.
- h. No welding, flame cutting, grinding, soldering or similar work shall be undertaken in respect of any drum, vessels or similar object or container where such object or container-
 - is completely closed, unless the rise in internal pressure cannot render in dangerous; or
 - contains any substance which, under the action of heat may explode or react to form dangerous or poisonous substances.
- i. Where pressure vessels/welding cylinders containing oxygen or acetylene are transported or used, the proper precautionary measures will be taken against bumping, falling, rolling etcetera.
- j. Gas welding hoses may only be joined with approved connectors and clamps.
- k. No oil or grease may be applied to oxygen valves and fittings.
- l. It is a sound practice to store pressure vessels and/or welding cylinders vertically and to secure them by means of a chain
- m. Acetylene cylinders may never be inclined in excess of 45°
- n. Proper and adequate fire prevention measures will be instituted and maintained for as long as the welding continues.
- o. Where explosive and/or flammable vapours are present welding will be done under "hot work" permits.

5.29 Transportation of employees

5.29.1 Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.

5.29.2 The principal contractor shall not allow employees to be transported in a goods vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of –

- a. at least 350 mm above the surface on which employees are seated; or
- b. at least 900 mm above the surface on which employees are standing,

in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.

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5.30 COVID-19

Documents that need to be updated

Document control will be a critical path to ensure that all employees knows the exact risks and mitigation factors around the COVID 19 virus.

- Baseline risk assessment shall be written on COVID 19 to ensure all the risks is covered and discussed to the employees
- Health and safety policy would need to be changed to address the COVID 19 pandemic
- All safe work procedures shall cover COVID 19
- COVID 19 guideline or procedure shall be drawn up and available in the safety file and discussed to all employees. This procedure will explain how the contractor will ensure that the virus does not spread during construction
- A guideline on what the process will be if an employee or a visitor is showing symptoms of the COVID 19 virus
- COVID 19 Toolbox talks shall be held with all employees to explain to the employees what the COVID 19 virus is
- Applicable Checklist & register should be in place to ensure that all the measures that is stipulated in the Client OHS Spec , Baseline Risk assessment , COVID procedure and contractor OHS Plan
- Sign in register will need to be available at every site entrance where the employee or site security can write down the temperature of the employee or Visitor
- All Health and safety related policies will need to be revised to ensure that COVID 19 is cover and explained in all of them in the applicable manner
- COVID 19 manager shall be appointed on site. This employee shall be on site full-time.

Hand sanitation points

Hand sanitation points will need to be placed at strategic places as well as the high risk area. The first place where sanitation station shall be placed is at all site entrances. High risk areas will be identified by the following:

- Areas where employees are in frequent and/or close contact (i.e. within 1,5 Meter of people)

The high risk areas will have additional sanitation stations, all employees shall wear mask or face shield when working closer than 1, 5 Meter from the nearest employee. Employees will be trained to wash hands more frequently or to use sanitizer more frequently.

The hand sanitizer that will be used shall have more than 70% of Ethyl alcohol. This needs to be ensured by the safety office on site as well as a Material Safety Data Sheet (MSDS) available close by for confirmation of the 70%. The hazardous chemical register shall be available in the flammable store. This register shall also include the hand sanitizer.

Hand washing posters shall be available at all hand washing stations to ensure that all employees know what the correct way is of washing your hands to cover all the

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areas. Informational posters about COVID 19 shall also be visible at these areas to ensure that employees know how the virus spreads and how to prevent spreading. The sanitisation stations will need to be cleaned on a regular basis.

Cleaning & disinfecting

All work surfaces need to be cleaned and disinfected on a regular basis. The chemical that will be used to clean the surfaces must have a minimum of 70% Ethyl Alcohol and the MSDS for that specific sanitizer must be available in the safety file under the MSDS's section. Plant, site offices & construction sites shall be decontaminated before the start of the site. The contractor that decontaminated the site shall issue a certificate to explain it has been done and explain what chemicals was used.

Offices

- All offices must have a biochemical hazardous bin with a medical waste bag that can be sealed
- The offices need to be cleaned on a regular bases
- If disposable gloves is being used they must be discarded in the medical waste bin.
- Only employees that is working in the office will be allowed in the offices
- All visitors must arrange with office personnel if they have an appointment with one of the office employees to move outside and have the appointment outside or in a well-ventilated area and if possible keep social distancing distance (1,5 Meter)
- Cleaners must focus on cleaning the following areas: desks, printers, door handles, kettles, microwaves & office equipment (cabinets, staplers, punchers) etc.
- No utensils shall be shared
- All employees shall sanitise their hands before and after using building plans

Ablution Facilities

- All ablution facilities shall have a washing station or a sanitation station.
- Sufficient paper towels shall be available to dry off hands after sanitizing
- All ablution facilities must have a biochemical hazardous bin, with a medical waste bag that can be sealed
- Paper towels shall be discarded into the medical waste bin provided at the ablution facilities
- Ablution facilities must be cleaned on a more regular basis to ensure a clean surface at all times
- Chemical toilets ratio is reduced to 1-10 employees and flush toilets ratio is reduced 1-15 employees

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- Cleaners must focus on the most touch areas when cleaning ablution facilities (toilet handles, door handles, taps, basins surfaces, toilet seats etc.)

Eating areas

The eating areas in construction is a high risk due to the fact that the employees under normal circumstances would have sit within 1, 5 Meter of each other.

- Eating areas will need to make bigger to accommodate all employees at once but still implement social distancing of 1, 5 Meter at least.
- All eating areas must have a biochemical hazardous bin, with a medical waste bag that can be sealed
- All Servite that was used or paper towels that was used to dry hands after using the sanitation station must be discarded in the hazardous bin.
- All eating areas shall have a washing station or a sanitation station
- Lunch breaks should be staggered between contractors / employees to ensure that during lunch the social distancing 1, 5 Meter can still be implemented.
- All chairs, Table tops and drinking water taps need to be cleaned after each lunch break
- Notice board shall be placed at the eating area to ensure that all employees see all posters and notices
- Clean drinking water need to be supplied to all employees at the eating area

Waste management

The waste management on site will be a critical path and will need to be monitored. The PPE and cleaning material that will be discarded will be seen as medical (biological hazardous) waste. This will need to be separated from normal waste, all medical waste bins will need to have a waste bag that can seal and need to be removed by a registered service provider. Hazardous bins shall be foot operated to ensure employees do not touch the lid of the hazardous bin.

Paper towels

Paper towels shall be supplied to by the contractor at all sanitation stations and washing stations for employees to dry their hands. These towel papers will be discarded in the medical waste bins. The contractor shall ensure that sufficient paper towels is in storage for a fast and effective replacements

PPE

All disposable PPE shall be discarded in these medical waste bins. Disposable PPE will be the following: dust masks, surgical masks etc.

Disinfectants

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The sanitizers that will be available throughout the site if finished and not refilled will be discarded as medical waste. The contractor must ensure that sufficient stock of hand sanitizer and soap is available in the storeroom. This chemicals and soap shall be recorded as it is booked out of the storeroom.

Wastewater

The water that will be used at the hand washing points will need be stored in a container with a lid. This infected water will then need to be treated before the water can be discarded in a normal municipal sewage system.

Biological hazardous waste bin

The hazardous waste bins that will be placed all over site will need to be a different colour from the normal waste bin. This hazardous waste bins will need the appropriate signage's as displayed below as well as a sealable bag inside. This is an example of the sign that needs to be visible on all hazardous waste bins on site:

The hazardous waste bin does not have a specific size that will be required, but the contractor will need to monitor the waste and accordingly let the registered service provider come and remove the waste. The waste can only be dumped at a Class 1 dumping site or be incinerated. The registered service provider will provide a certificate that it has been discarded at the class 1 dumping site or incinerated. Hazardous bins shall be foot operated to ensure employees do not touch the lid of the hazardous bin.

Personal Protective Equipment (PPE)

COVID 19 be prevented from spreading using the correct PPE. The COVID 19 virus is spread by small droplets that can be enter the body at the face through the nose, mouth and the eyes. This is the critical areas that must be protected at all cost to prevent the employees from getting the feared COVID 19 virus. The disposable PPE will be treated as biological hazardous waste as explained above in waste management

The Contractor shall supply all employees with 2 cloth masks (1 to wear, 1 to wash). The cloth masks will be checked every morning at the entrance of the gate to ensure that employees are washing the cloth masks. This is an example of a cloth mask:

If the employees are working in a high risk area, the contractor will need to have a look at alternative measures to protect the employee's eyes as well as mouth and nose area. Face shields is a perfect example of an alternative way to protect our workers. There is different types of face shields on the market, from loose face shields with a strap to face shield and hard hat combination. Below is an example of these alternative equipment that will need to be in place in high risk areas when possible:

Employees will only be required to wear hand gloves when the task will require it (will be stipulated in the risk assessment). When for example the employee will do grinding work and the face shield will not last then the employee will be required to wear goggles and a normal dust mask.

Accommodation

When the contractor provides accommodation to the employees on site the following shall be in place:

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- The quantity of employees must be looked at that is accommodated on site
- The restrictions on the number of employees using the same ablution facilities
- Cutlery & utensils shall not be shares between employees
- Social distancing between employees (at least 1,5 Meter) when in sleeping quarters and in cooking facilities
- The employees shall practice good personal hygiene and shall sanitise areas that on a regular basis that is used by all employees
- Employees shall not share any personal belongings with each other for example : clothes & towels

The transportation of employees shall be monitored by the site safety officer as well as site management. Transportation will be arranged that all employees at all times implement the social distance of at least 1, 5 Meter from each other. Employee using transportation as well as drivers will at all times wear mask to prevent the spread of the virus. Employees shall sanitize their hands before using transportation and after using transportation. Transporting employees in big quantities must at all times be prevented if possible. All transport shall be disinfected before and after use. If employees drives with personal transport, sufficient parking must be made available

COVID 19 Signage's

The applicable signage's shall be displayed at all the applicable places for example all the notice boards that is identified in this document. The contractor shall as far as reasonable practicable post posters about COVID 19 to ensure that all employees know the essential information of the virus. The signage's will be essential to show employees with the use of pictograms what is the most important factors to keep in mind on site. All hand sanitation station shall have a sign that states it is a sanitation station and while have a poster to explain to employees exactly how to wash their hands to prevent getting infected.

This is examples of signs that shall be visible all over site to keep reminding employees of the risks. The site entrances shall get additional signage's to explain to visitor and employees the applicable PPE for the site. These signs is examples of signs that shall be visible at the site entrances:

COVID 19 Posters

The contractor will be responsible to display posters on all notice boards on site as stipulated to ensure that employees are informed of the COVID 19 virus. The responsibility is with the contractor to communicate these posters to the employees and the train them on all the precaution measures and the keep them informed

6. Health and safety policy

The principal contractor has to provide the Client, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the principal contractor's stance on and principles adopted for health and safety.

7. Cost for health and safety measures during the construction process

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To enable the Client to comply with Construction Regulation 4 (1) (h), all potential principal contractors submitting tenders have to demonstrate to the Client that sufficient provision has been for the cost to implement the health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHSACT and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force the Client to reject the tender in terms of Construction Regulation 4 (4).

8. Project specific risk assessment requirements

See Annexure 7.

9. Overview of annexures

- Annexure 1: Specified framework for the principal contractor's occupational health and safety plan.
- Annexure 2: Legal compliance assessment.
- Annexure 3: Measuring injury experience.
- Annexure 4: SHE risk management report.
- Annexure 5: Guide to risk assessments.
- Annexure 6: The Construction Regulations.
- Annexure 7: List of risk assessments.

10. Enquiries

For any enquiries regarding this occupational health and safety specification, please contact –

Name: GODWIN NCUBE
PAWACONS PTY LTD
Tel: +27 34 317 1118
E-mail: godwin@pawacons.co.za

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ANNEXURE 1

SPECIFIED FRAMEWORK FOR THE PRINCIPAL CONTRACTOR'S OCCUPATIONAL HEALTH AND SAFETY PLAN

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Specified framework for the principal contractor's occupational health and safety plan

1. Definitions

In this document the following expressions shall bear the meanings assigned to them below:

- 1.1 **Client** means any person for whom construction work is being performed and/or undertaken [i.e. JS Moroka Local Municipality for purposes of this specification];
- 1.2 **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993, Construction Regulations that came into effect on 18 July 2003;
- 1.3 **Occupational health and safety plan** means a documented plan which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;
- 1.4 **Occupational health and safety specification** means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working and/or visiting the site;
- 1.5 **OHSACT** means the Occupational Health and Safety Act, No 85 of 1993, as amended; and
- 1.6 **Principal Contractor** means an employer, as defined by section 1 of the OHSACT who performs construction work and is appointed by the Client to be in overall control and management of the construction works.

2. Introduction

In terms of the Construction Regulations [Regulation 4 (1) (a)] of the OHSACT, the Client is required to compile an occupational health and safety specification for each of its projects and the principle contractor, appointed by the Client 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 Client's occupational health and safety specification. In terms of Regulation 4 (2), the Client and the principle contractor are required to agree on the occupational health and safety plan before any work may commence.

The principal contractor's health and safety plan has to follow the framework specified in this annexure a minimum guideline.

3. Specified framework for the Occupational Health and Safety Plan

3.1 Introduction

The principal contractor has to demonstrate to the Client that it has developed a suitable and sufficiently documented occupational health and safety plan for the specific project appointed as well as the necessary competencies, experience and resources to perform the construction work safely. The principle contractor should submit the following documentation for perusal and verification by the client:

- a. Management structure.
- b. Quality plan.
- c. Human resources plan.
- d. Registered workplace skills plan.
- e. "Letter of good standing" from the Compensation Commissioner or licensed compensation insurer.
- f. Proof of induction and other training of employees.

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- g. Copy of minutes as an example of other project's occupational health and safety committee meetings and copies of incident investigation reports.

3.2 Contents of the occupational health and safety plan

3.2.1 Occupational health and safety management programme

The occupational health and safety management programme should at least provide a detailed overview of the following matters:

- a. Management of occupational health and safety risks.
- b. Occupational health and safety structures and appointments.
- c. Programme of occupational health and safety inspections.
- d. Occupational health and safety representatives.
- e. Occupational health and safety committee.

3.2.2 Communication principles and management of work

The communication and management principles to be applied should at least cover the following:

- a. Management structure and responsibilities.
- b. Occupational health and safety goals for the project and arrangements for monitoring and reviewing occupational health and safety performance.
- c. Arrangements for:
 - Regular liaison between parties on site; and
 - Consultation with the workforce.
- d. The exchange of design information between the client, designers, supervisors and contractors on site.
- e. Handling of design changes during the project.
- f. Selection and control of contractors.
- g. The exchange of occupational health and safety information between all contractors on matter such as:
 - Security;
 - Site induction and onsite training;
 - Facilities and first-aid;
 - The reporting and investigation of accidents and incidents;
 - The production and approval of risk assessments and method statements;
 - OHSACT site rules; and
 - Fire and emergency procedures.
- h. Reporting to the client i.e. results of occupational health and safety inspections, incidents, incident investigations and committee meetings.
- i. Reporting of incidents to the Department of Labour and compensation insurer where appropriate

3.2.3 Arrangements for controlling significant site risks and exposures

The following are some examples of the arrangements for controlling the most significant site risks/exposures:

3.2.3.1 Safety risks

- a. Services, including temporary electrical installations.

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- b. Preventing employees from falling into excavations, from trucks etcetera.
- c. Work with, on or near fragile materials.
- d. Control of lifting operations.
- e. The maintenance of plant and equipment.
- f. Poor ground conditions.
- g. Traffic routes and segregation of vehicles and pedestrians.
- h. Storage of hazardous materials.
- i. Dealing with existing unstable structures and/or land.
- j. Accommodating adjacent land use.
- k. Other significant safety risks as and when identified.

3.2.3.2 Health risks

- a. Storage and use of hazardous chemical substances.
- b. Dealing with contaminated land or material.
- c. Manual handling.
- d. Reducing noise and vibration.
- e. Provision of adequate lighting.
- f. Ventilation considerations.
- g. Extreme heat and cold temperature considerations.
- h. Dealing with HIV/Aids and other illnesses.
- i. Provision of and maintaining ablution and eating facilities.
- j. Other significant health risks as and when identified.

3.3 Preparation of an occupational health and safety operational reference file and/or manual

The following are some of the minimum requirements to be addressed:

- a. Layout, format and content requirements.
- b. Arrangement for the collection and gathering of information.
- c. Storage and archiving of all the information.
- d. Copy to the client at completion of project.

3.3.1 Minimum contents of an occupational health and safety file and/or manual

- a. Occupational health and safety policy.
- b. Notice of new projects.
- c. Relevant site start-up documentation.
- d. Security measures.
- e. Copies of written designations and appointments.
- f. Arrangements with contractors and/or mandataries.
- g. Occupational health and safety rules and procedures.
- h. Induction training details.
- i. Occupational health and safety training.
- j. Occupational health and safety promotion.
- k. Occupational health and safety representatives.
- l. Occupational health and safety committees.
- m. Workplace facilities, for example ablution, sheltered eating areas etcetera.
- n. Personal protective equipment.
- o. Workplace inspections and assessments.
- p. Investigation and reporting of incidents and/or accidents.
- q. Mechanical safeguarding.
- r. Electrical safeguarding.
- s. Safeguarding against hazardous substances.

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- t. Lifting machinery and equipment.
 - u. Construction vehicles and mobile plant.
 - v. Welding, heating and flame cutting.
 - w. Excavations.
 - x. Protection of the environment affected by construction activities.
 - y. Keeping of records in terms of the OHSACT.

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3.4 Risk assessments

Every principle contractor performing construction work shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that a risk assessment is undertaken by a competent person, appointed in writing, and the risk assessment shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 5 (1).

The risk assessment shall include, at least:

- a. The identification of the risks and hazards to which persons may be exposed to;
- b. The analysis and evaluation of the risks and hazards identified;
- c. A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;
- d. A plan to monitor the application of the SWPs; and
- e. A plan to review the risk assessments as the work progresses and changes are introduced.

In order to ensure compliance with the Construction Regulations, the principal contractor will be required to carry out the following three forms of risk assessment:

3.4.1 Baseline or datum risk assessments

The principal contractor will be required carry out a risk assessment before the commencement of construction activities. This "baseline" or 'datum" risk assessment will form part of the principal contractor's health and safety plan. The risks and hazards to which persons, plant, vehicles and facilities may be exposed during the construction should be identified and evaluated. Measures to reduce or control these risks or hazards should be defined during this assessment. The effectiveness of the measures defined and the baseline risk assessment prepared shall be monitored and reviewed from time to time to ensure that it remains relevant and accurate

3.4.2 Issue based risk assessments

The Contractor will be required to carry out separate risk assessments during construction of the Works when methods and procedures are varied, for example when:

- a. Designs are amended,
- b. New machines are introduced,
- c. Plant is periodically cleaned and maintained,
- d. Plant is started-up or shut-down,
- e. Systems of work change or operations alter,
- f. Indents or near-misses occur, or
- g. Technological developments invalidate prior risk assessments

3.4.3 Continuous risk assessments

The OHSACT specifically requires that employers shall provide and maintain working environments that are safe and without risk to health. The general awareness of hazards needs to be raised as work ethic to maintain a safe and risk-free environment on an ongoing basis. This is achieved by continuous risk assessments, the most important form of risk assessment that takes place as an

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integral part of day-to-day management. Examples of continuous risk assessments include:

- a. Regular audits,
- b. Maintaining general hazard awareness, and
- c. Pre-work risk assessment

The principal contractor's health and safety plan should include a comprehensive list (based on Annexure 7 of the client's occupational health and safety specification) to be carried out as well as the methodology to be followed. The plan should also include detailed site-specific occupational health and safety rules to be applied during the project.

3.5 Cost for health and safety measures during the construction process

To enable the Client to comply with Construction Regulation 4 (1) (h), all potential contractors submitting tenders have to demonstrate to the Client that sufficient provision has been for the cost to implement the health and health and safety plan proposed by the principal contractor to meet the requirements of this health and safety specification as well as that of the OHSACT and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential principal contractor's tender document. Failure by the principal contractor to adhere to this requirement will force the Client to reject the tender in terms of Construction Regulation 4 (4).

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ANNEXURE 2

OCCUPATIONAL HEALTH, -SAFETY AND ENVIRONMENT: RISK ASSESSMENT CHECKLIST

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Occupational health, -safety and environment: Risk assessment checklist

(Based on the Construction Regulations of the Occupational Health and Safety Act)

* Denotes items applicable to both construction sites, contractor plant and storage yards

ELEMENT	REMARKS
1. Administrative and legal requirements	
2. Education, training and promotion	
3. Public safety, security measures and emergency preparedness	
4. Personal protective equipment	
5. Housekeeping	
6. Working at heights (including roof work)	
7. Scaffolding, formwork and support work	
8. Ladders	
9. Electrical safeguarding	
10. Emergency, fire prevention and protection	
11. Excavations and demolition	
12. Tools	
13. Cranes	
14. Builder's hoist hoists	
15. Transport and materials handling equipment	
16. Site plant and machinery	
17. Plant and storage yard or site workshop specifics	
18. Workplace environment, health and hygiene	

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1. Administrative and Legal Requirements

<i>OHSACT Section or Regulation</i>	Subject	Requirements	Yes/No
Construction Regulation 3	Notice of carrying out Construction work	Department of Labour notified. Copy of notice available on site.	
General Admin. Regulation 4	*Copy of OHSACT	Updated copy of the OHSACT and Regulations on site. Readily available for perusal by all employees.	
COID Act Section 80	*Registration with Compensation Commissioner or other approved compensation insurer	Written proof of registration/Letter of good standing available on site.	
Construction Regulation 4 & 5(1)	OHSACT specification, plans and programme	OHSACT spec received from JW. OHSACT plan developed. OHSACT programme implemented. Plans and programme updated regularly.	
Section 8(2)(d) Construction Regulation 7	*Hazard identification and risk assessment	Hazard identification carried out and recorded. Risk assessment and –plan drawn up and updated. Employees and sub-contractors informed and trained.	
Section 16(2)	*Assigned duties (Managers)	Responsibility of complying with the OHSACT assigned to other person/s by CEO.	
Construction Regulation 6(1)	Designation of person responsible on site	Competent person appointed in writing as construction supervisor.	
Construction Regulation 6(2)	Designation of assistant for responsible person	Competent person appointed in writing as assistant construction supervisor.	
Section 17 & 18 and General Administrative Regulations 6 & 7	*Election and designation of occupational health and safety representatives	More than 20 employees - one representative and one additional representative for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful reports. Reports actioned by management.	
Section 19 & 20 and General Administrative Regulations 5	*Occupational health and safety committee/s	Committee/s established. Members appointed in writing. Meetings held monthly. Minutes kept. Actioned by management.	
Section 37(1) & (2)	*Agreement with mandataries, contractors and sub-contractors	Written agreement with contractors and sub-contractors. List of contractors and sub-contractors displayed. Proof of Registration with Compensation Commissioner or Compensation Insurer as well as Letter of Good Standing. Construction Supervisor designated. Written arrangements regarding represen-	

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OHSACT Section or Regulation	Subject	Requirements	Yes/No
		tatives and committee. Written arrangements regarding first-aid.	
Section 24 and General Administrative Regulation 8 COID Act Section 38, 39 and 41	*Reporting of incidents (Department of Labour)	Incident reporting procedure displayed. All incidents in terms of section 24 reported to the Provincial Director, Department of Labour, within 3 days (Annexure 1 and/or WCL 1 or 2). Cases of occupational disease reported. Copies of reports available on site. Record of first-aid injuries kept.	
General Administrative Regulation 9	*Investigation and recording of incidents	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of reports (Annexure 1) available on site. Tabled at committee meeting. Actioned taken by site management.	
Construction Regulation 8	Fall prevention and protection	Competent person appointed to draw up and supervise the fall protection plan. Proof of appointees' competence available on site. Risk assessment carried out for work at heights. Fall protection plan drawn up and updated. Plan available on site.	
Construction Regulation 8(5)	Roof work	Competent person appointed to plan & supervise roof work. Proof of appointees' competence available on site. Risk assessment carried out. Roof work plan drawn up and updated. Roof work inspect before each shift and inspection register kept. Employees medically examined for physical and psychological fitness and written proof on site.	
Construction Regulation 9	Structures	Information regarding the structure being erected received from the designer including: • geo-science technical report where relevant; • the design loading of the structure; • the methods and sequence of construction; and • anticipated dangers, hazards and/or special measures to construct safely. Risk assessment carried out. Method statement drawn up. All above available on site. Structures inspected before each shift. Inspections register kept.	

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OHSACT Section or Regulation	Subject	Requirements	Yes/No
Construction Regulation 10	Formwork and support work	Competent person appointed in writing to supervise erection, maintenance, use and dismantling of support and formwork. Design drawings available on site. Risk assessment carried out. Support and formwork inspected: • before use and inspection; • before pouring of concrete; • weekly whilst in place; and • before stripping or dismantling and inspection register kept.	
Construction Regulation 14	Scaffolding	Competent persons appointed in writing to: • erect scaffolding (scaffold erector/s); • act as scaffold team leaders; and • inspect scaffolding weekly and after inclement weather (scaffold inspector/s). Written proof of competence of above appointees. Appointees available on site. Copy of SABS 085 available on site. Risk assessment carried out. Inspected weekly and/or after bad weather. Inspection register/s kept.	
Construction Regulation 15	Suspended platforms	Competent persons appointed in writing to: • control the erection of suspended platforms; • act as suspended platform team leaders; and • inspect suspended scaffolding weekly and after inclement weather. Risk assessment conducted. Certificate of authorisation issued by a registered professional engineer available on site and copy forwarded to the Department of Labour. The following inspections of the whole installation carried out by a competent person • after erection and before use; • daily prior to use; and • inspection register kept. The following tests to be conducted by a competent person: • load test of whole installation and working parts every 12 months; and • hoisting ropes, hooks and load attaching devices quarterly; and • tests log book kept. Employees working on suspended platforms should be medically examined for physical and psychological fitness. Written proof available.	

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<i>OHSACT Section or Regulation</i>	Subject	Requirements	Yes/No
Construction Regulation 11	Excavations	Competent person/s appointed in writing to supervise and inspect excavation work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Excavations inspected: • before every shift; • after any blasting; • after an unexpected fall of ground; • after any substantial damage to the shoring; and • after rain. Inspections register kept. Method statement developed where explosives will be and/or are used.	
Construction Regulation 12	Demolition work	Competent person/s appointed in writing to supervise and control demolition work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Engineering survey and method statement available on site. Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept.	
Construction Regulation 17	Materials hoist	Competent person appointed in writing to inspect the material hoist. Written proof of competence of above appointee available on site. Materials hoist to be inspected weekly by a competent person. Inspection register kept.	
Construction Regulation 24	Water environments (including caissons and cofferdams)	Competent person appointed in writing to supervise, control and inspect work on or over water and the construction, installation, and dismantling of caissons and/or cofferdams. Written proof of competence of above appointee available on site. Risk assessment carried by a competent person on a daily basis. Inspection register kept.	
Construction Regulation 19	Explosive powered tools	Competent person appointed to control the issue of the explosive powered tools and cartridges as well as the service, maintenance and cleaning. Register kept of above. Empty cartridge cases, nails and fixing bolts returns recorded. Cleaned daily after use.	

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Witness:



OHSACT Section or Regulation	Subject	Requirements	Yes/No
Construction Regulation 18	Batch plants	Competent person appointed to control the operation of the batch plant as well as the service, maintenance and cleaning of this plant. Register kept of above. Risk assessment carried out. Batch plant to be inspected weekly by a competent person and inspections register kept.	
Construction Regulation 13 and Mine Health and Safety Act	Tunneling	Complying with Mines Health and Safety Act (29 of 1996). Risk Assessment carried out.	
Construction Regulation 20 Driven Machinery Regulations 18 and 19	Cranes and lifting machines equipment	Competent person appointed in writing to inspect cranes, lifting machines and equipment. Written proof of competence of above appointee available on site. Cranes and lifting tackle identified and numbered. Register kept for lifting tackle. Logbook kept for each individual crane. Inspection: • All cranes: Daily by operator. • Tower cranes: After erection and thereafter 6 monthly. • Other cranes: Annually by competent person. • Lifting tackle (slings, ropes, chain slings etcetera): Three monthly.	
Construction Regulation 22 Electrical Machinery Regulations 9 and 10 Electrical Installation Regulations	*Inspection and maintenance of electrical installation and equipment (including portable electrical tools)	Competent person appointed in writing to inspect/test the installation and equipment. Written proof of competence of above appointee available on site. Inspections: • Electrical installation and equipment inspected after installation, alterations and quarterly thereafter. Inspection registers kept. • Portable electric tools and -lights and extension leads identified/numbered. • Monthly visual inspection by user, issuer or storeman. Register kept.	
Diving Regulations	Diving operations	Competent person appointed in writing to supervise diving operations and ensure maintenance, statutory inspection and testing by an approved inspection authority of equipment used. Written proof of competence of above appointee available on site.	

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OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Proof of registration of all divers present on site available. Risk assessment carried out. Diving manual produced and available on site. Record of voice communications kept. Diving operations record kept. Each diver keeps a personal logbook and entries countersigned by the diving supervisor. Decompression tables available on site. Records of any decompression illness kept. Certificate of manufacture of any compression chamber or diving bell in use available on site.	
Construction Regulation 26 General Safety Regulation 8(1)(a)	*Designation of stacking and storage supervisor	Competent persons with specific knowledge and experience designated to supervise all stacking and storage. Written proof of competence of above appointee available on site.	
Construction Regulation 27 Environmental Regulation 9	*Designation of a person to coordinate emergency planning and fire protection	Person/s with specific knowledge and experience designated to coordinate emergency contingency planning and execution and fire prevention measures. Emergency evacuation plan: • Developed and available on site; • Drilled and practiced; and • Records of drills and practices available on site. Fire risk assessment carried out. All fire extinguishing equipment: • Identified and on register; • Inspected weekly and inspection registers kept; • Replaced after use; and • Serviced annually.	
General Safety Regulation 3	*First-aid	Every workplace provided with sufficient number of first-aid boxes (required where 5 persons or more are employed). First-aid boxes freely available. Content of boxes as per the minimum requirements of the OHSACT. One qualified First-aider appointed for every 50 employees (required where more than 10 persons are employed). List of First-aiders and competency certificates available on site. Name and contact details of person in charge of first-aid box clearly displayed. Location of first-aid boxes clearly demarcated.	

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OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Signs instructing employees to report all injuries and/or illness including first-aid injuries.	
General Safety Regulation 2	Personal protective equipment (PPE)	PPE risk assessment carried out. Items of PPE prescribed and use enforced. Records of issue kept. Undertaking by employee to use and/or wear PPE.	
General Safety Regulation 9	*Inspection and use of welding and/or flame cutting equipment	Competent person/s with specific knowledge and experience designated to inspect electric arc, gas welding and flame cutting equipment. Written proof of competence of above appointee available on site. Equipment identified/numbered and entered into a register. Equipment inspected monthly. Inspection register kept.	
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 23	*Control of storage and usage of HCS and other flammables	Competent person/s with specific knowledge and experience designated to control the storage and usage of HCS (including flammables). Written proof of competence of above appointee available on site. Risk assessment carried out. Register of HCS kept and/or used on site.	
Vessels under Pressure Regulations	Vessels under pressure (VUP)	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections and testing of VUPs. Written proof of competence of above appointee available on site. Risk assessment carried out. Certificates of manufacture available on site. Register of VUPs on site. Inspections and testing by approved inspection authority (AIA): • after installation, re-erection or repairs; • every 36 months; and • register or log kept of inspections, tests, modifications and repair on site.	
Construction Regulation 21	Construction vehicles and earth moving equipment	Operators or drivers appointed to: • Carry out a daily inspection prior to use; and • Drive the vehicle or plant that he/she is competent to drive or operate. Written proof of competence of above appointee available on site. Record of daily inspections kept on site.	
General Safety Regulation 13A	*Inspection of Ladders	Competent person appointed in writing to inspect ladders.	

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OHSACT Section or Regulation	Subject	Requirements	Yes/No
		Ladders inspected at arrival on site and monthly thereafter. Inspections register kept on site.	
General Safety regulation 13B	Ramps	Competent person appointed in writing to supervise the erection and inspection of ramps. Inspection register kept on site.	

2. Education, training and promotion

Subject	Requirement	Yes/No
*Occupational Health and Safety Policy as per OHSACT Section 7(1)	Policy signed by CEO and published and communicated to employees. Policy displayed on employee notice boards. Management and employees committed.	
*Company and site health and safety rules as per OHSACT Section 13(a)	Rules published. Rules displayed on employee notice boards. Rules issued and explained to employees with written proof hereof. Follow-up to ensure employees understand and adhere to the rules.	
*Induction and task safety training as per OHSACT Section 13(a)	All new employees receive health and safety induction training. Training includes task safety instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand and adhere to instructions.	
*General health and safety training as per OHSACT Section 13(a)	All employees receive basic health and safety training. Written proof kept. Operators of plant and equipment receive specialised training. Follow-up to ensure employees understand and adhere to instructions.	
*Occupational health and safety promotion	Incident experience board indicating among others - • Number of hours worked without an injury; and • Number of days worked without an injury. Safety grading - Board kept up to date. Relevant safety posters displayed and changed regularly. Employee notice board for health and safety notices. Site health and safety competitions. Company health and safety competition. Participation in regional health and safety competitions. Suggestion scheme.	

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3. Public safety, security measures and emergency preparedness

Subject	Requirement	Yes/No
*Notices and signs	Notices and signs at entrances along perimeters indicating “No unauthorised entry” and “Entry at own risk” . Notices and signs at entrance instructing visitors and non-employees what to do, where to go and where to report on entering the site or yard with directional signs for example “Visitors to report to office” . Notices and signs posted to warn of overhead work and other hazardous activities for example General Warning Signs .	
Site safeguarding	Nets, canopies, stills, fans etcetera to protect members of the public passing and/or entering the site.	
*Security measures	Access control measures and register in operation. Security patrols after hours and weekends. Sufficient lighting after dark. Guard has access to telephone or other means of emergency communication.	
*Emergency preparedness	Emergency contact numbers displayed near telephone. Emergency evacuation instructions posted up on all notice boards (including employees' notice boards). Emergency contingency plan available on site or in yard. Doors open outwards and unobstructed. Emergency alarm audible all over (including in toilets).	
*Emergency drill and evacuation	Adequate number of employees trained to use fire equipment. Emergency evacuation plan available, displayed and practiced. (See Section 1 for designation and register).	

4. Personal protective equipment (PPE)

Subject	Requirement	Yes/No
*PPE needs analysis	Need for PPE identified and prescribed in writing.	
*Head protection	It is compulsory for all persons on site to wear safety helmets including sub-contractors and visitors (where prescribed).	
*Foot protection	All persons on site have to wear safety footwear including gumboots for concrete or wet work and non-slip shoes for roof work.	
*Eye and face protection	Eye and face protection (such as goggles, face shields, welding helmets) to be used when operating the following: • Jack or kango hammers; • Angle or bench grinders; • Electric drills (overhead work into concrete, cement and bricks); • Explosive powered tools; • Concrete vibrators or pokers; • Hammers and chisels; • Cutting or welding torches; • Arc welding equipment; • Skill or bench saws; and • Spray-painting equipment etcetera.	
*Hearing protection	Hearing Protectors (such as muffs, plugs) used when operating the following:	

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Subject	Requirement	Yes/No
	- Jack or kango hammers; - Explosive powered tools; and - Wood or aluminum working machines such as saws, planers, routers.	
*Hand protection	Protective gloves to be worn by employees handling or using: - Cement, bricks, steel or chemicals; - Welding equipment; - Hammers and chisels; and - Jack or kango hammers etcetera.	
*Respiratory protection	Suitable and efficient respirators to be worn correctly by employees handling or using: - Dry cement; - Dusty areas; - Hazardous chemicals; - Angle grinders; and - Spray-painting etcetera.	
*Fall Prevention Equipment	Suitable safety belts or fall arrest equipment correctly used by persons working on or in unguarded, elevated positions such as: - Scaffolding; - Riggers; - Lift shafts; - Edge work; and - Ring beam edges etcetera. Other applicable methods of fall prevention should also be applied such as catch nets.	
*Protective clothing	All jobs requiring protective clothing (such as overalls, rain wear, welding aprons etcetera) to be identified and clothing worn.	
*PPE issue and control	Identified equipment to be issued free of charge. All PPE should be maintained in good condition (i.e. regular checks). Workers instructed in the proper use and maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on file.	

5. Housekeeping

Subject	Requirement	Yes/No
*Scrap removal system	All items of scrap, unusable off cuts, rubble and redundant material removed from working areas on a regular basis. Scrap and/or waste removal from heights by chute, hoist or crane (i.e. nothing thrown or swept over sides). Scrap disposed of in designated containers or areas. Removal from site or yard on a regular basis.	
Stacking and storage (See Section 1 for designation and register)	Stacking: - Stable; - On firm level surface or base; - Not leaning and/or collapsing; - Irregular shapes bonded; - Not exceeding 3 times the base;	

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Subject	Requirement	Yes/No
	- Stacks accessible; and - Removal from top only. Storage: - Adequate storage areas provided; - Functional for example demarcated storage areas, racks, bins etcetera; - Special areas identified and demarcated for example flammable gas, cement etcetera: - Neat, safe, stable and square: - Store and storage areas clear of superfluous material; - Storage behind sheds etcetera should be neat and under control; and - Storage areas free from weeds, litter etcetera.	
*Waste control or reclamation	Re-usable off cuts and other re-useable material removed daily and kept to a minimum in the work areas. All re-useable materials neatly stacked or stored in designated areas (i.e. nails removed or bent over in re-useable timber). Issue of hardware, nails, screws and cartridges etcetera should be controlled and return of unused items monitored.	
Sub-contractors	Sub-contractors required to comply with the site or yard's housekeeping requirements.	

6. Working at heights

Subject	Requirement	Yes/No
Openings	Unprotected openings adequately guarded, fenced and barricaded with catch nets installed where necessary.	
General requirements	Work discontinued when bad or hazardous weather prevails. Fall protection measures (including warning notices) when working close to edges or on fragile roofing material.	

7. Scaffolding, formwork and support work

Subject	Requirement	Yes/No
Access and system scaffolding (See Section 1 for designation and register)	Foundation firm and stable. Sufficient bracing. Tied to structure and secured from side or cross movement. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Complying with OHSACT and SABS 085.	
Free Standing Scaffolding	Foundation firm and stable. Sufficient bracing. Platform boards in good condition and secured.	

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Subject	Requirement	Yes/No
	Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe or unsafe for use signs to be used. Height and base ratio correct. Outriggers used and tied to structure where necessary. Complying with OHSACT and SABS 085.	
*Mobile scaffolding	Foundation firm and stable. Sufficient bracing. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Wheels and swivels in good condition Brakes working and applied. Height to base ratio correct. Outriggers used where necessary. Complying with OHSACT and SABS 085.	
Suspended scaffolding	Outriggers securely supported and anchored. Correct number of steel wire ropes used. Platform as close as possible to the structure. Handrails on all sides. All winches, ropes, cables and brakes inspected regularly. Inspection registers kept on site. Scaffolding complies with OHSACT. Winches maintained by competent person.	
Formwork and support work	All components in good condition. Foundation firm and stable. Adequate bracing and stability ensured. Good workmanship, uprights straight and plum. Good cantilever construction. Safe access provided. Areas under support work tidy. Same standards as for system scaffolding.	
Special scaffolding	Special scaffolding for example cantilever, jib and truss-out scaffolds erected to an acceptable standard and inspected by specialists. Inspection registers to be kept on site.	
Edges and openings	Edges barricaded to acceptable standards. Manhole openings covered and/or barricaded. Openings in floor and other openings covered, barricaded or fenced. Stairs provided with handrails. Lift shafts barricaded or fenced off.	

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8. Ladders

Subject	Requirement	Yes/No
*Physical condition, use and storage (See Section 1 for designation and register)	Stepladders – hinges, stays, braces and stiles in order. Extension ladders – ropes, rungs, stiles, safety latch and hook in order. Extension or straight ladders secured or tied at the bottom or top. No joined ladders used. All ladders stored on hooks or racks and not on ground. Ladders protrude 900 mm above landings, platforms or roof. Fixed ladders higher than 5 m have cages or fall arrest system.	

9. Electrical safeguarding

Subject	Requirement	Yes/No
*Electrical distribution boards and earth leakage	Colour coded, numbered and symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate, openings blanked off and no exposed “live” conductors or terminals. Door kept close. Switches and/or circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument - test results within 15 – 30 milli-amperes. Aperture openings provided for the plugging in and removal of extension leads without the need to open the door.	
*Electrical installations and wiring	Temporary wiring or extension leads in good condition with no bare or exposed wires. Earthing continuity and polarity correct: “Brown is live, Blue is neutral, Green and Yellow earth the lot” Cables protected from mechanical damage and moisture. Correct loading observed for example no heating appliance used from lighting circuit etcetera. Light fittings and lamps protected from mechanical damage/moisture.	
*Physical condition of electrical appliances and tools	Electrical Equipment and Tools (includes all items plugging in to a 15 Amp supply socket): • Insulation and casing in good condition. • Earth wire connected or intact where not of double insulated design. • Double insulation mark where no earth wire. • Cord in good condition/no bare wires/secured to machine & plug. • Plug in good condition, connected correctly and correct polarity.	

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10. Emergency, fire prevention and protection

Subject	Requirement	Yes/No
*Fire extinguishing equipment (See Section 1 for designation and register)	Fire Risks Identified and on record. Fire Extinguishing Equipment available for: • Offices; • General stores; • Flammable store; • Fuel storage tanks; • Gas welding or cutting operations; and • Where flammable substances are being used or applied.	
*Maintenance	Fire equipment serviced minimum annually, but preferably 6 monthly.	
*Location & Signs	Fire Extinguishing Equipment: • Clearly visible; • Unobstructed; and • Sign posted including "No Smoking" and "No Naked Lights" where required i.e. (flammable store, gas store, fuel tanks etc.).	
* Storage issue and control of flammables (incl. gas cylinders)	Storage area provided for flammables with suitable doors, ventilation, bund etcetera. Flammable store neat and tidy with no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied. Only sufficient quantities issued for one day's use. Special gas cylinder store or storage area. Gas cylinders stored, used and transported upright and secured in trolley, cradle or structure that is well ventilated. Types of gas cylinders identified and stored separately. Full cylinders stored separately from empty cylinders.	
*Storage, issue and control of Hazardous Chemical Substances (HCS) (See Section 1 for designation and register)	HCS storage principles applied i.e. products segregated. Provision made for leakage and spillage containment. Emergency (serviceable) showers and eye wash facilities provided. HCS under lock and key as well as controlled by designated person. Decanted or issued in containers with information and warning labels. Disposal of unwanted HCS by recognised disposal agent.	

11. Excavations and demolition

Subject	Requirement	Yes/No
Excavations deeper than 1.5 m. (See Section 1 for designation and register)	Shored or braced to prevent caving or falling in. Provided with an access ladder. Excavations guarded, barricaded or lighted after dark in public areas. Soil dumped at least 1 m away from edge of excavation. On sloping ground soil dumped on lower side of excavation.	

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12. Tools

Subject	Requirement	Yes/No
*Hand tools	Shovels, Spades and Picks: - Handles free from cracks and splinters; - Handles fit securely; and - Working end sharp and true. Hammers: - Good quality handles, no pipe or reinforcing steel handles; - Handles free from cracks and splinters; and - Handles fit securely. Chisels: - No mushroomed heads or heads chamfered; - Not hardened; and - Cutting edge sharp and square. Saws: - Teeth sharp and set correctly; and - Correct saw used for the job.	
*Explosive powered tools (See Section 1 for designation and register)	Only used by trained and authorised personnel. Prescribed warning signs placed or displayed where tool is in use. Inspected at least monthly by competent person and results recorded in on site register. Issue and return recorded including cartridges or nails and unused cartridges, nails, empty shells recorded. Cleaned daily after use in on site register.	

13. Cranes

Subject	Requirement	Yes/No
Tower crane (See Section 1 for designation and register)	Only operated by trained authorised operator with valid certificate of training. Certificate available on site. Structure - no visible defects. Electrical installation good and safe. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. Limit switches fitted and operational. Access ladder fitted with backrests or fall arrest system installed. Lifting tackle in good condition and inspection colour coding current.	
*Mobile crane (See Section 1 for designation and register)	Only operated by trained authorised operator with valid certificate of training. Certificate available on site. Rear view mirrors and windscreen visibility good. Windscreen wipers operating effectively. Indicators operational. Hooter working. Tyres safe with sufficient tread and pressure visibly sufficient. No missing wheel nuts. Headlights, taillights operational.	

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Subject	Requirement	Yes/No
	Grease nipples and grease on all joints. No visible oil leaks. Hydraulic pipes visibly sound with no leaks. No undue corrosion on battery terminals. Boom visibly in good condition with no apparent damage. Cable and sheaves greased with no visible damage, split wires or corrosion. Brakes working properly. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. By-pass valves operational. Deflection chart displayed and visible to operator or driver. Outriggers functional used.	
*Gantry crane	Only operated by trained authorised persons. Correct slinging techniques used. Recognised displayed on chart signals used. Log book kept up to date. Prescribed inspections conducted on crane and lifting tackle. "Crane overhead" signage, where applicable. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed and load limiting switches fitted and operational.	

14. Builder's hoist

Subject	Requirement	Yes/No
Builder's hoist (See Section 1 for designation and register)	"Hoist in operation" - sign displayed. General construction strong and free from latent defects. Tower: - Adequately secured and braced. - At least 900 mm available for over travel. - Barricaded at least 2 100 mm high at ground level and floors. - Landing place provided with gate at least 1 800 high. Platform: - No persons conveyed on platform. - Steel wire ropes with breaking strain of six times maximum weight. - Signal systems used. - Goods prevented from moving/falling off. - Effective brake capable of holding maximum weight.	

15. Transport and materials handling equipment

Subject	Requirement	Yes/No
*Site vehicles	All site vehicles, dumpers, bobcats, loaders etcetera checked daily before used by driver or operator. Inventory of vehicles used/operated on site. Inspection by means of a checklist and results recorded. No persons riding on equipment not designed for passengers. Site speed limit posted and not exceeded.	

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Subject	Requirement	Yes/No
	Drivers and operators trained and licensed. Licenses available on site. No unauthorised persons allowed to drive or operate equipment.	
Conveyors	Conveyor belt nip points and drive guarded. Emergency stop and lever brake fitted, clearly marked and accessible.	

16. Site plant and machinery

Subject	Requirement	Yes/No
Brick cutting machine	Operator trained and only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Area around the machine dry and slip or trip free as well as clear of off cuts. All moving drive parts guarded. Electrical supply cable protected. Operator using correct PPE i.e. eye, face, hearing, foot, hands and body.	
*Electric arc welder	Welder trained. Only authorised and trained persons use welder. Adequately earthed. Electrode holder in good condition and safe. Cables, clamps, lugs and connectors in good condition. Area in which welding machine is used is dry and protected from wet. Welder using correct PPE i.e. eye, face, foot, body and respiratory. Screens and warning signs placed.	
*Woodworking machines	Operator's trained and only authorised persons use machines. Provided with guards and guards used. Operators using correct PPE i.e. eye, face, foot and hearing.	
*Compressors	Relief valves set, locked and sealed. Maximum safe working pressure (MSWP) indicated on face of pressure gauge face and not on glass cover. All drives adequately guarded. Receiver and lines drained daily. Hoses good condition and clamped, not wired.	
Concrete mixer and batch plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE i.e. eye, hands and respiratory. All moving drive parts guarded. Emergency stops identified, indicated and accessible. Area kept clean, dry and free from tripping and slipping hazards. Banksman identified and crane signals displayed and used.	
*Gas welding and flame cutting equipment	Only authorised and trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition, correct type and all connections with clamps. Cylinders stored, used and transported in upright position, secured in trolley or cradle. Fire prevention control methods applied. Hot work permits.	

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17. Plant and storage yard or site workshop specifics

Subject	Requirement	Yes/No
OHSACT, Section 8(2)(1) General Machinery Regulation 2(1) Supervision of the use and maintenance of machinery	Persons with specific knowledge and experience designated to supervise the use and maintenance of machinery. Critical items of machinery identified, numbered and placed on register or inventory. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded.	
General Machinery Regulation 9(2) Notices regarding operation of machinery	Schedule D notice posted in work areas.	
Vessels under Pressure Regulation 13(1)(b) Supervision of the use and maintenance of vessels under pressure (VUP)	Persons with specific knowledge and experience designated to Supervise the use and maintenance of VUPs. VUPs identified, numbered and placed on register. Manufacturers plate intact. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded and test certificates available.	
Lock-out procedure	Lock-out procedure in operation.	
Ergonomics	Ergonomics survey conducted. Results on record. Survey results applied.	
Demarcation and colour coding	Demarcation principles applied. All services, pipes, electrical installation, stop-start controls, emergency controls etcetera colour coded to own published or SABS standard. Employees trained to identify colour coding.	
Portable and bench grinders	Area around grinder clear and trip/slip free. Bench grinders mounted securely and grinder generally in good condition. No excessive vibration. On and off switch or button clearly demarcated and accessible. Adequate guards in place. Tool rest – secure, square and maximum 2 mm gap. Stone or disk - correct type and size, mounted correctly and dressed. Use of eye protection enforced.	
Ancillary lifting equipment	Chain blocks, tirlors, jacks and mobile gantries etcetera identified and numbered on register. Chains in good condition and links no excessive wear. Lifting hooks – throat pop marked and safety latch fitted. SWL/MMML marked or displayed.	
Presses, guillotines and shears	Only operated by trained and authorised persons. PPE used by operators Interlocks or lockouts fitted.	

BIDDER:

DR. JSMLM:

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Witness:



18. Workplace environment, health and hygiene

Subject	Requirement	Yes/No
*Lighting	Adequate lighting in places where work is being executed for example stairwells and basements or after sunset. Light fittings placed and installed causing no irritating or blinding glare.	
*Ventilation	Adequate ventilation, extraction and exhausting in hazardous areas for example where chemicals and adhesives are stored, welding takes place and where petrol or diesel motors are running in confined spaces or basements.	
*Noise	Tasks identified where noise exceeds 85 dBa. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dBa.	
*Heat stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30 (see Environmental Regulation 4). Cold drinking water readily available when extreme temperatures are experienced.	
*Ablution facilities	Sufficient toilets provided for men and women separately i.e. 1 per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites). Toilet paper available. Sufficient showers provided for men and women separately. Facilities for washing hands provided. Soap available for washing hands. Means of drying hands available. Changing facilities or area provided for men and women separately. Ablution facilities hygienic and clean.	
*Eating and cooking facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area. Refuse bins with lids provided. Facilities clean and hygienic.	
*Pollution of environment	Measures in place to minimize dust generation. Accumulation of empty cement pockets, plastic wrapping or bags, packing materials etcetera prevented. Spillage or discarding of oil, chemicals and diesel into storm water and other drains prevented.	
*Hazardous chemical substances (See Section 1 for	All substances identified and list available e.g. acids, flammables, poisons etc. Material Safety Data Sheets (MSDS) indicating	

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Witness:



Subject	Requirement	Yes/No
designation and register)	hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely.	

Name of person who have undertaken the assessment
 Signature

Date

Received by

Designation

Date

Tabled at health and safety committee

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. Initial: DR. JSM

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Witness:



ANNEXURE 3

MEASURING INJURY EXPERIENCE

BIDDER:

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2

Witness:

DR. JSMLM:

Initial: DR. JSM



Measuring injury experience

1. Background

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called “DIFR”. The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of person-hours worked.

The DIFR has recently been replaced internationally with a disabling injury incidence rate (DIIR). The only difference between the two rates are that the 1 million in the calculation is replaced with 200 000 (200 000 purported to be the number of hours and average person works in a lifetime).

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often “hidden” by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The construction industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims, as these are more difficult to hide or manipulate because the reporting of compensable injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

2. Compensation Incidence Frequency Rate (CIFR)

2.1 Formula

$$\frac{\text{No of compensation claims} \times 200\,000}{*220 \text{ person hours} \times \text{No of employees}}$$

2.2 Definitions

.1 No of compensation claims:	The number of claims lodged with the Commissioner or COID insurer for the period under review.
200 000:	The fixed factor to align the rate with other rates used internationally.
Person hours worked Include:	Hourly paid employees Sub-contractors (No of employees X *220 each) Staff (No of employees X *220 hours each)
220 person-hours:	The *average number of hours worked by one employee in one month in the construction industry.
	Note: * Overtime, absence on leave or sick leave, unrecorded after-hours time worked by senior and middle management factored into this average.

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Witness:



No of employees:

The actual or average number of employees employed for the period under review.

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Witness:



ANNEXURE 4

SAFETY, HEALTH AND ENVIRONMENT (SHE): EXAMPLE OF RISK MANAGEMENT REPORT

BIDDER:

Initial: Authorized signatory/ies:1.

2

Witness:

DR. JSMLM:

Initial: DR. JSM



Safety, Health and Environment (SHE): Example of risk management report

.1.1.1 Please note that this is an example only and all information is fictitious.

XYZ Construction

SHE risk management report for the period January 2004 to March 2004

1. Introduction

We trust that this quarterly SHE Risk Management report will provide a clear picture of the company's performance as far as occupational health, safety and environment is concerned.

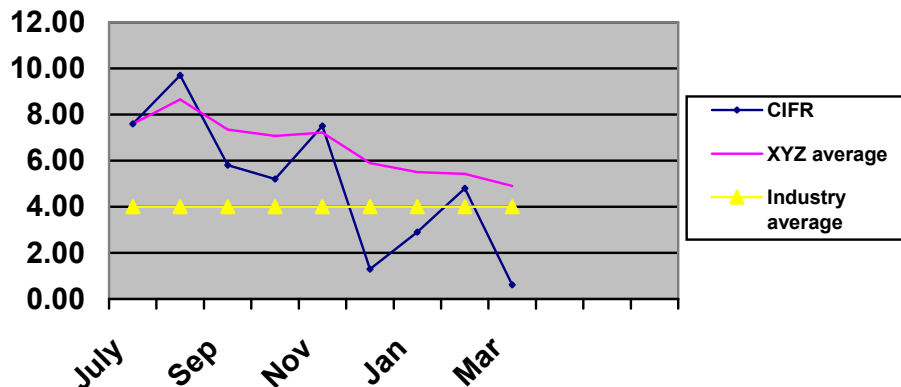
The first quarter of 2004 generally reflected an improvement in injury experience and indicates a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2003 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation during May 2004 of the new electronic SHE Management system that will provide the tools to implement the SHE programme and make it available to all management and supervisory staff.

2. Incident statistics

2.1 Compensation Incident Frequency Rate (CIFR)

$$\text{CIFR} = \frac{\text{No of compensation claims} \times 200\,000}{220 \text{ person hours} \times \text{No of employees}}$$



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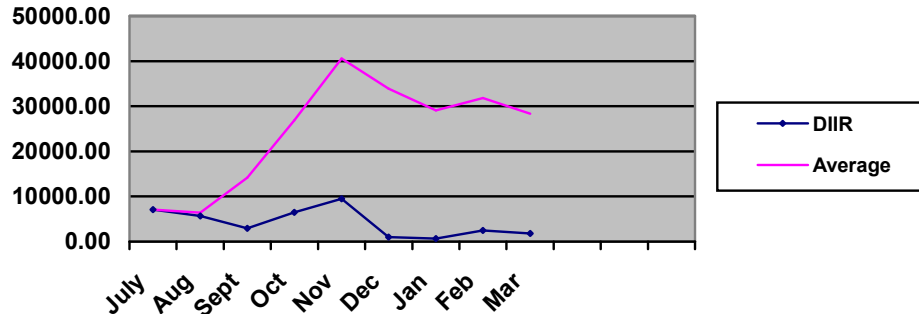
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Witness:



2.2 Disabling Injury Incidence Rate (DIIR)

$$DIIR = \frac{\text{No disabling injuries} \times 200\,000}{\text{Person hours worked}}$$



2.3. Other major incidents

Three other major incidents were experienced in the period under review:

- 2.3.1. A major trench collapsed at Job. 00123: XYZ Head Office, Braamfontein: No personnel injured, extensive damage to foundations: 3 days delay.
- 2.3.2. A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Randburg. The driver jumped off and was not injured. Cost of damage to façade: R45 000.
- 2.3.3. A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and leveling machines. Cost of replacing the hut and machines: R30 000.

3. Risk areas

The following items of concern need priority consideration by management:

- 3.1. New employees must undergo pre-employment medical examinations to:
 - protect XYZ from possible claims at a later stage
 - ensure that only capable persons are employed
 - prevent injuries and illness in the workplace
 - enhance XYZ image
- 3.2. Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

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Witness:



6. Legal matters

- 6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gilooley's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SANS 085). This is currently being attended to and the inspector will return on 15 April 2004 to ascertain if the notice has been complied with.

7. Occupational health matters

7.1 HIV Aids

The proposed clinic will soon be operational and we will then be able to send our employees who have tested positive for HIV/Aids to the clinic for counselling and eventual treatment when necessary.

The mobile clinic attended to and tested fifty employees on a voluntary basis at 3 sites this month. Eighteen of them tested positive.

7.2 Tuberculosis (TB)

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 April 2004 respectively to screen employees for TB.

7.3 Noise

All suspected noise pollution areas have been identified and tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

8. Environmental measures

Inspectors from the Botswana Department of Environment visited Djwaneng and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day with water instead of the present twice per day.

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9. Achievements and awards

- 9.1 The client at Djwaneng (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client's SHE managers. The project manager and his team are to be congratulated for this sterling effort.
- 9.2 Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1 million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

SHE Risk Manager

2004-03-31

Source: SAFCEC Occupational Health and Safety Committee

BIDDER:

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Witness:



ANNEXURE 5

GUIDE TO RISK ASSESSMENTS

BIDDER:

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Witness:

DR. JSMLM:

Initial: DR. JSM



Guide to risk assessments

.1 Nine steps to effective risk assessments

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

2. How serious is it?

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

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

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

BIDDER:

DR. JSMLM:

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Witness:



.1 C7.2 GUIDE TO RISK ASSESSMENT

.2 HOW TO DO IT

.3 9 Steps to Effective Risk Assessment

- Step 1 : Identifying the hazards
 Step 2 : Aim to identify major hazards, don't waste time on the minor & detail
 Step 3 : Involve as many people as possible in the process especially those at risk
 Step 4 : Gather all the information and analyse it
 Step 5 : Look at what actually occurs including non-routine operations
 Step 6 : Use a systematic approach to ensure all hazards are adequately addressed
 Step 7 : Assess the risks arising taking into account the effectiveness of controls
 Step 8 : Ensure the process is practical and realistic
 Step 9 : Always record the assessment in writing including assumptions and why

How serious is it?

PROBABILITY

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

.1 CONSEQUENCES

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

PROBABILITY

	A	A	B	C	D	E
C O N S E Q U E N C E	1	1	2	3	4	5
2	2	3	4	5	6	
3	3	4	5	6	7	
4	4	5	6	7	8	
5	5	6	7	8	9	

ACTION

Risk Rating:	1 – 3 =	Serious	Immediate (within 1 week)
	4 - 5 =	High	Within 1 month
	6 – 7 =	Moderate	> 4 weeks
	8 – 9 =	Acceptable	No action

BIDDER:

DR. JSMLM:

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Witness:



SAFCEC – SA Federation of Civil Engineering Contractors

LIST OF RISK ASSESMENTS AVAILABLE (as at 2003.07.07)

Access Towers	Kerb Laying
Acid Washing	Landscaping
Aggregate/Sand Delivery	Lathe
Angle Grinder	Layering of (Road work) Materials
Arc Welding	Layering Process
Armco Barriers - installation	Laying Kerbs
Assem. of elements by boilermaker	Laying of stormwater drains
BackFilling	Levelling – of materials
Bag Filling	Lifting Concr. Beams on to trailers
BandSaw	Loading supervisor
Banksman	Loading/Unloading - of Trucks
Batch Plant	Loffels – placing/laying
Bench Grinder	Machine operator
Bin Scraper	Making of steel items
Block Feeder	Material delivery
Block Machine	Materials Handling
BoomScraper	Mixer operator
Bricks – Laying of	Mobile Cranes
Brickwork	Pedestal Drill
Bulk Earthworks	Pedestal Grinder
Cement Spray Truck	Placing Concrete
Clearing & Grubbing of Area/Site	Plastering
Compr. Gas Cylinders-handling	Portable Electric Drill
Compressors – Air	Portable Electric Tools
Concrete – placing of (1)	Portable Ladders
Concrete – placing of (2)	Post Tensioning
Confined Spaces – Working in	Radial Arm Drill
Conveyors	Refuelling Vehicles/Plant
Cutting – of Earthworks	Reinforcing Steel – placement (1)
David Arm	Reinforcing Steel – placement (2)
Deck Panels – placing	Road Traffic Signs – placement of
Depalletor Operator	Roadworks - Deviations
Diss. Assembly Rejects	Roof Truss erection
Distribution Boards – Electrical	SandBlasting
Drivers – of Vehicles	Scaffolding
Dry Tile Deracking	Shuttering – Erection
Dumpers - Concrete	Shuttering – Stripping
Electrical Installation – Maintenance of	Site Establishment (1)
Elevated Positions	Site Establishment (2)
Erecting – Instal/ Shutters	SkillSaw
Excavations (1)	Spray Painting
Excavations (2)	Stormwater pieps - laying
Explosive Powered Tools	Structural Steel – Erection
Finger Car	Structural Steel – Laydown
Fire Fighting Prevention	Surveying
Fire Prevention & Protection	Suspended Scaffolds
Formwork	Termite Proofing
Friction Saw	Tile Machine
Front End Loader	Tile stacking
Fuel Supply	Timber Feeder
Gas Cylinders – Handling of	Tower Cranes
Gas Welding-cutting oper.	Traffic Accommodation
Gas Welding-cutting operations	Traffic Control/Regulation
Guillotine	Trench Excavation
Hand & Spray Painting	Use of angle grinder
Hand ToolsJacking – with Hydraulic Pump	Use of Port. Elec. Tools.
Hanging scaffolding	Wet tile racking
Hauling	Work confined spaces
High cut operations	Work in Elevated Positions
Jacking Hydraulic Pump (1)	Working Platforms
Jacking Hydraulic Pump (2)	Workshops

BIDDER:

DR. JSMLM:

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Witness:



OH&S – RISK ASSESSMENT

RISK ASSESSMENT: SITE ESTABLISHMENT

TYPE OF WORK PERFORMED: _____

DATE COMPLETED: _____

ASSESSMENT PERFORMED BY: _____

Step No.	Activity Rules	What can cause injury/damage?	Result of cause (injury/damage)	Preventative Measures (tools, PPE, equipment)	Controls (test, check list)	Weights		
1.	Access to be a main consideration when positioning offices, stores and parking areas on site during planning stage. Possible one way traffic to be introduced	Restricted access to parking and delivery areas to storage areas.	Damage to transport and plant	Proper layout of site by Construction Manager and Site Agent taking into consideration all transport plant and material movements and storage on site.	Site Agent to check layout Drg. To compare with OHS Act requirements and whether they are to Concor's standards.			
2.	Oxygen and acetylene store to be a minimum distance of five metres away from other buildings. It needs to be well ventilated and have a roof to keep direct exposure to the sun.	Fire explosion leaking gas may spread if to close to other buildings.	Damage to property and plant. Health of employees.	See item 1.	See item 1.			
3.	Diesel tanks to be a distance of 10 metres away from any building and parking areas. A slab with a bund wall capable of carrying 110% of the tank capacities must be constructed for the tanks to stand in.	Fire may spread to adjacent buildings and plant if is too close.	Burns on all parts of body. Damage to plant and property.	See item 1. Persons in charge of tanks should be inducted regarding all the hazards involved and how to control them	See item 1. Supervisor to monitor on an ongoing basis if rules are complied with			

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Step No.	Activity Rules	What can cause injury/damage?	Result of cause (injury/damage)	Preventative Measures (tools, PPE, equipment)	Controls (test, check list) During erection & ongoing	Weights		
						Safety	Health	R/R
4.	All cables from distribution board to offices, store and for security to be underground. The distribution board is to stand on a firm level base and should be locked at all times.	Damaged cables loose wires exposed.			.1.1			
5.	Security fencing minimum height of 1.8 metre around site area together with two double gates.	Theft of property. Access to unauthorised persons.	Loss of property. Injury to persons.	Security guards to be appointed to keep watch.	Supervisor to put system of control in place			
6.	Services to be available during site establishment.	Not having the essential services at hand.	Health of employees. Loss of property through fire.	6.1 to 6.5 are to be included on first order placed for contract. Dry chemical powder ABCDE fire extinguishers to be ordered 4 off for start.	Site Agent to see that these requirements are on site from start of site establishment.			
6.1	Fire fighting equipment.							
6.2	First aid boxes.							
6.3	First aider.							
6.4	Drinking water.							
6.5	Toilets.							
7.	Water tank tower to consist of very well cross braced pipe structure standing on concrete base.	Badly constructed water tower under designed structurally could cause tower to collapse.	Injury to persons. Damage to property.	Supervisor to erect as per design office specifications.				

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Witness:



Step No.	Activity Rules	What can cause injury/damage?	Result of cause (injury/damage)	Preventative Measures (tools, PPE, equipment)	Controls (test, check list) During erection & ongoing	Weights		
8.	Safety sign & notice board to be placed close to entrance of main gate	Not informing employees and public what the site rules are.	Injury to persons. Damage to property.	Concor standard notices/ Posters to be displayed. Available from Head Office.	Site manager to check that board has been erected.			
9.	Laydown areas to be sufficient in size. timber poles to be available to stack materials on.	With inadequate space various materials will be stacked on top of each other causing unstable stacks.	Injury to persons loading, unloading materials.	Allow sufficient space for laydown area during planning stage of site layout. Access to be considered important.	Site agent to discuss with Foreman regarding his requirement at planning stage.			
10.	Toilets are to be well ventilated.	No ventilation in toilets may cause germs to propagate.	Possible health problems due to germs.	Extraction fans to be fitted if required.	Supervisor to check if he is satisfied with ventilation.			

ASSESSMENT: 1 – 10 (HIGH)

11 – 16 (MEDIUM)

17 – 25 (LOW)

BIDDER:

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Witness:



FORM 7.2 RISK ASSESSMENT: EXCAVATIONS (PLANT & MANUAL)

TYPE OF WORK PERFORMED: _____

DATE COMPLETED: _____

ASSESSMENT PERFORMED BY: _____

.1

Step No	Activity Rules	What can cause injury/damage	Result of cause (injury/damage)	Preventative measures (tools, PPE, equipment)	Controls (test, checks)			
	When using a machine to excavate, observe the following:					Safety	Health	Finan.
1	Operator must ensure there are no employees working in this area.	Employees not visible to operate or moving machine.	An injury to all parts of the body and as well as more serious fatal injuries.	Operator must work under close supervision. He must inspect the work area prior to commencing work.	Supervisor to ensure employees are informed and operator works under his supervision.			
2	Machine not to operate while employees are working in same excavations.	Danger of injury of employee by machine.	Bruises, scratches, fractures and fatal.	Supervisor must instruct operator when to commence work.	Supervisor to control and enforce procedure.			
3	All excavated materials must be discharged not closer that 2m from the edge of	Materials can fall onto employees and the excavation may need extra work.	Injuries to employees and the excavation may need extra work.	Supervisor must instruct operator where to place discharged soil and gravel.	Supervisor to control.			

BIDDER:

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2 _____

Witness: _____



	<i>the excavation. When excavating manually, observe the following. See original</i>							
4	<i>Using a pick and a shovel.</i>	<i>Unsafe use of a pick or a shovel.</i>	<i>Injury to employees.</i>	<i>Induct employees on safe working procedures.</i>	<i>Supervisor and charge hand to control.</i>			
5	<i>Check sides of excavations.</i>	<i>Unstable / loose material causes unsafe condition.</i>	<i>Injury to employees and damage to excavations.</i>	<i>Supervisor to inspect sides on a regular basis.</i>	<i>Supervisor / charge hand to control.</i>			
6	<i>Excavated material to be placed away from side of excavation.</i>	<i>Materials can fall onto employees when working inside the excavation.</i>	<i>Bruises, scratches, fractures and fatal.</i>	<i>Employees to be instructed not to place loose soil on edge of the excavation.</i>	<i>Supervisor to control.</i>			

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Step No	Activity Rules	What can cause injury/damage	Result of cause (injury/damage)	Preventative measures (tools, PPE, equipment)	Controls (test, checks)			
7	All excavations deeper than 1,5 m must have an access ladder available for employees to get into and out of the excavation safely.	Employees not able to enter or exit the excavation safely.	In case of an emergency too many employees may be buried as a result of inadequate access. Employees may also strain muscles to get into or out of an excavation without safe and convenient access.	Providing a ladder makes access into and out of the excavation area easy and safe.	Supervisors to ensure employees are given safe and convenient access to excavations.			
8	Sides of excavation to be shored (if necessary) and barricaded immediately.	Sides may collapse. Employees may NOT BE AWARE OF THE EXCAVATION AND FALL INTO IT.	Damage to the excavation. Injury to employees,	Put adequate shoring and strong physical barricades in place immediately.	Supervisor and chargehand to control.			
9	Excavations must be backfilled as soon as possible after excavation.	Excavations could collapse. Employees could trip and fall in. Vehicles and machinery could damage excavations.	Damage to excavations. Injury to employees. Damage to plant and machinery.	Keep area barricaded with a strong physical barricade and backfill as soon as possible.	Supervisor and chargehand to control.			

BIDDER:

DR. JSMLM:

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Witness:



ANNEXURE 6

CONSTRUCTION REGULATIONS

BIDDER:

DR. JSMLM:

Initial: Authorized signatory/ies:1. **Initial:** DR. JSM

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Witness:



Construction Regulations

Database: Government Gazettes
Gazette No: 25207
Notice No: 1010
Regulation Gazette No: 7721
Gazette: GOV
Date: 2003-07-18

GOVERNMENT NOTICES

DEPARTMENT OF LABOUR

No. R. 1010
18 July 2003

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

CONSTRUCTION REGULATIONS, 2003

The Minister of Labour has, in terms of section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

SCHEDULE

Definitions

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

"agent" means any person who acts as a representative for a client;

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

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

"client" means any person for whom construction work is performed;

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

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"construction work" means any work in connection with-

- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- (b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

"construction vehicle" means a vehicle used for means of conveyance for transporting persons or material or both such persons and material, as the case may be, both on and off the construction site for the purposes of performing construction work;

"contractor" means an employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

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

"designer" means any of the following persons-

- (a) a person who prepares a design;
- (b) a person who checks and approves a design;
- (c) a person who arranges for any person at work under his control (including an employee of his, where he is the employer) to prepare a design, as well as;
- (d) an architect or engineer contributing to, or having overall responsibility for the design;
- (e) building services engineer designing details for fixed plant;
- (f) surveyor specifying articles or drawing up specifications;
- (g) contractor carrying out design work as part of a design and build project;
- (h) temporary works engineer designing formwork and false work; and
- (i) interior designer, shop-fitter and landscape architect.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"person day" means one day for carrying out construction work by a person on a construction site for one normal working shift;

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

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

"professional technologist" means any person holding registration as a Professional Technologist under the Engineering Profession Act, 2000;

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

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

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

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

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

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

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

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

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

"structure" mean-

- (a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- (b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
- (c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two meters or more;

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

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

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

Scope of application

- 2.(1) These Regulations, shall apply to any persons involved in construction work.
- (2) The provisions of regulation 4.(1)(a) shall not be applicable where the construction work carried out is in relation to a single storey domestic building for a client who is going to reside in such building upon completion thereof.
- (3) The provisions of regulations 4(1)(a) and 5(1), 5(3)(a) and 5(4) shall not be applicable where the construction work is in progress and more than fifty percent thereof has been completed at the date of promulgation of these regulations: Provided that an inspector may instruct accordingly that these Regulations shall be applicable.

Notification of construction work

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- 3.(1) A principal contractor who intends to carry out any construction work shall-
- (a) before carrying out that work, notify the provincial director in writing of the construction work if it includes-
 - (i) the demolition of a structure exceeding a height of 3 meters; or
 - (ii) the use of explosives to perform construction work; or
 - (iii) the dismantling of fixed plant at a height greater than 3 meters.
 - (b) before carrying out that work, notify the provincial director in writing when the construction work-
 - (i) exceeds 30 days or will involve more than 300 person days of construction work; and
 - (ii) includes excavation work deeper than 1 meter; or
 - (iii) includes working at a height greater than 3 meters above ground or a landing.
- (2) The notification to the provincial director contemplated in sub regulation (1) must be done on the form similar to Annexure A to these Regulations.
- (3) A principal contractor shall ensure that a copy of the completed form contemplated in sub regulation (2) is kept on site for inspection by an inspector, client, client's agent or employee.
- 4.(1) A client shall be responsible for the following in order to ensure compliance with the provisions of the Act:
- (a) to prepare a health and safety specifications for the construction work, and provide any principal contractor who is making a tender or appointed to perform construction work for the client with the same;
 - (b) to promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;
 - (c) to appoint each principal contractor in writing for the project or part thereof on a construction site;
 - (d) to take reasonable steps to ensure that each principal contractor's health and safety plan as determined in regulation 5(1) is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;
 - (e) to stop any contractor from executing construction work, which is not in accordance with, the principal contractor's health and safety plan contemplated in regulation 5(1) for the site or which poses a threat to the health and safety of persons;
 - (f) to ensure that where changes are brought about to the design or construction, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely;
 - (g) to ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
 - (h) to ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.
- (2) A client shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in regulation 5(1) and thereafter finally approve the health and safety plan for implementation.
- (3) A client shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.

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- (4) No client shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor which he or she intends to appoint has the necessary competencies and resources to carry out the work safely.
- (5) A client may appoint an agent in writing to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by these regulations upon a client, shall as far as reasonably practicable apply to the agent so appointed.
- (6) No client shall appoint any person as an agent, unless the client is reasonably satisfied that the person he or she intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by these regulations.

Principal Contractor and Contractor

5. (1) A principal contractor shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan, based on the client's documented health and safety specifications contemplated in regulation 4(1)(a), which shall be applied from the date of commencement of and for the duration of the construction work.
- (2) A principal contractor shall take reasonable steps as are necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.
- (3) A principal contractor shall be responsible for the following in order to ensure compliance with the provisions of the Act -
 - (a) to provide any contractor who is making a tender or appointed to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in regulation 4(1)(a) pertaining to the construction work which has to be performed;
 - (b) to appoint each contractor contemplated in paragraph (a) in writing for the part of the project on a construction site;
 - (c) to take reasonable steps to ensure that each contractor's health and safety plan contemplated in sub regulation (4) is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the principal contractor and contractor(s), but at least once every month;
 - (d) to stop any contractor from executing construction work, which is not in accordance with, the principal contractor's and/or contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
 - (e) to ensure that where changes are brought about to the design and construction, sufficient health and safety information and appropriate resources are made available to the contractor to execute the work safely;
 - (f) to ensure that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
 - (g) to ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during construction process.
- (4) A contractor shall provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the principal contractor's health and safety specification contemplated in regulation 5(3)(a) provided by the principal contractor, which plan shall be applied from the date of commencement of and for the duration of the construction work.
- (5) A principal contractor shall discuss and negotiate with the contractor the contents of the health and safety plan contemplated in sub regulation (4), and shall finally approve that plan for implementation.

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- (6) A principal contractor shall ensure that a copy of his or her health and safety plan contemplated in sub regulation (1), as well as the contractor's health and safety plan contemplated in sub regulation (4), is available on request to an employee, inspector, contractor, client or client's agent.
- (7) Every contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and these Regulations, is opened and kept on site and made available to an inspector, client, client's agent or principal contractor upon request.
- (8) A principal contractor shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in sub regulation (7), include a record of all drawings, designs, materials used and other similar information concerning the completed structure.
- (9) A principal contractor shall ensure that in addition to the documentation required in the health and safety file as determined in sub regulations (7) and (8), a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done are included and available.
- (10) No principal contractor shall appoint a contractor to perform construction work unless the principal contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.
- (11) Where a contractor appoints another contractor to perform construction work, the responsibilities as determined in sub regulations (2) to (6) that apply to the principal contractor shall apply to the contractor as if he or she were the principal contractor.
- (12) No contractor shall appoint another contractor to perform construction work unless he or she is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.
- (13) Contractors shall co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act.
- (14) Every contractor shall as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

Supervision of construction work

6. (1) The contractor shall appoint a full-time competent employee in writing as the construction supervisor, with the duty of supervising the construction work.
- (2) The contractor may in writing appoint one or more competent employees to assist the appointed construction supervisor contemplated in sub regulation (1), and every such employee shall, to the extent clearly defined by the contractor in the letter of appointment, have the same duties as the construction supervisor: Provided that the designation of any such employee shall not relieve the construction supervisor contemplated in sub regulation (1) of any personal accountability for failing in his supervisory duties referred to in terms of this regulation.
- (3) Where the contractor has not appointed an employee as referred to sub regulation (2), or, in the opinion of an inspector, not a sufficient number of such employees, that inspector may require the employer to appoint the number of employees indicated by the inspector, and the provisions of sub regulation (2) shall apply in respect of those employees as if they had in the first instance been appointed under sub regulation (2).

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- (4) No construction supervisor appointed in terms of sub regulation (1) shall supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that a sufficient number of competent employees have been appropriately designated under sub regulation (2) on all the construction sites, the appointed construction supervisor may supervise more than one site.
- (5) If, however, the construction supervisor appointed in terms of sub regulation (1) for more than one construction site will not, in the opinion of an inspector, be able to supervise the works favourably, an inspector may require the contractor to appoint the required number of employees as contemplated in sub regulation (2) to assist the appointed construction supervisor or instruct the contractor to appoint the construction supervisor who had been appointed in terms of sub regulation (1) more appropriately.
- (6) A contractor shall upon having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing to assist in the control of all safety related aspects on the site: Provided that, where the question arises as to whether a construction safety officer is necessary, the decision of an inspector shall be decisive.
- (7) The appointed construction safety officer as contemplated in sub regulation (6) shall as far as is reasonably practicable be utilized to give input at the early design stage and where not appointed at this stage, he or she shall be given the opportunity to input into the health and safety plan when wanting to do so, and a record of such shall be kept in the health and safety file contemplated in regulation 5(7)
- (8) No contractor shall appoint a construction safety officer to assist in the control of safety related aspects on the site unless he or she is reasonably satisfied that the construction safety officer he or she intends to appoint, has the necessary competencies and resources to assist the contractor.

Risk assessment

- 7.(1) Every contractor performing construction work shall before the commencement of any construction work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing and the risk assessment shall form part of the health and safety plan to be applied on the site and shall include at least-
 - (a) the identification of the risks and hazards to which persons may be exposed to;
 - (b) the analysis and evaluation of the risks and hazards identified;
 - (c) a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
 - (d) a monitoring plan; and
 - (e) a review plan.
- (2) A contractor shall ensure that a copy of the risk assessment is available on site for inspection by an inspector, client, client's agent, contractor, employee, representative trade union, health and safety representative or any member of the health and safety committee.
- (3) Every contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the risk assessment.
- (4) A contractor shall ensure that all employees under the his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

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- (5) A principal contractor shall ensure that all contractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.
- (6) A contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analyzed, evaluated and addressed in the risk assessment.
- (7) Notwithstanding the requirements laid down in sub regulation (4), no contractor shall allow or permit any employee or person to enter any site, unless such employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.
- (8) A contractor shall ensure that all visitors to a construction site undergoes health and safety induction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment.

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- (9) Every employee on site shall-
- (a) be in possession of proof of the health and safety induction training as determined in sub regulation (7), issued by a competent person prior to the commencement of construction work; and
 - (b) carry the proof contemplated in paragraph (a) for the duration of that project or for the period that the employee will be on the construction site.

Fall protection

- 8.(1) A contractor shall cause-
- (a) the designation of a competent person, responsible for the preparation of a fall protection plan;
 - (b) the fall protection plan contemplated in (a) to be implemented, amended where and when necessary and maintained as required;
 - (c) steps to be taken in order to ensure the continued adherence to the fall protection plan.
- (2) The fall protection plan contemplated in sub regulation (1), shall include-
- (a) risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location;
 - (b) the processes for evaluation of the employees' physical and psychological fitness necessary to work at elevated positions and the records thereof;
 - (c) the programme for the training of employees working from elevated positions and records thereof; and
 - (d) the procedure addressing the inspection, testing and maintenance of all fall protection equipment.
- (3) A contractor shall ensure that the construction supervisor appointed in terms of regulation 6(1), is in possession of the most recently updated version of the fall protection plan.
- (4) Notwithstanding the provisions of sub regulations (1) and (2), the contractor shall ensure that-
- (a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
 - (b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;
 - (c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;
 - (d) fall prevention and fall arrest equipment is-
 - (i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
 - (ii) securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;
 - (e) fall arrest equipment shall only be used where it is not reasonably practicable to use fall prevention equipment; and
 - (f) suitable and sufficient steps shall be taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.
- (5) Where roof work is being performed on a construction site, the contractor shall ensure that in addition to the requirements set out in sub regulations (2) and (4), it is furthermore indicated in the fall protection plan-
- (a) that the roof work has been properly planned;
 - (b) that the roof erectors are competent to carry out the work;

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- (c) that no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;
- (d) that prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;
- (e) that the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;
- (f) that suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and
- (g) that there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

Structures

- 9.(1) A contractor shall ensure that
 - (a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; and
 - (b) no structure or part of a structure is loaded in a manner which would render it unsafe.
- (2) The designer of a structure shall-
 - (a) before the contract is put out to tender, make available to the client all relevant information about the design of the relevant structure that may affect the pricing of the construction work;
 - (b) inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
 - (c) subject to the provisions of paragraph (a) and (b) ensure that the following information is included in a report and made available to the contractor-
 - (i) a geo-science technical report where appropriate;
 - (ii) the loading the structure is designed to withstand; and
 - (iii) the methods and sequence of construction process.
 - (d) not include anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which could be avoided by modifying the design or by substituting materials;
 - (e) take into account the hazards relating to any subsequent maintenance of the relevant structure and should make provision in the design for that work to be performed to minimize the risk;
 - (f) carry out sufficient inspections at appropriate times of the construction work involving the design of the relevant structure in order to ensure compliance with the design and a record of those inspections is to be kept on site;
 - (g) stop any contractor from executing any construction work which is not in accordance with the relevant design;
 - (h) conduct a final inspection of the completed structure prior to its commissioning to render it safe for commissioning and issue a completion certificate to the contractor; and
 - (i) ensure that during commissioning, cognisance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.
- (3) A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.
- (4) Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two

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years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.

- (5) Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

Formwork and support work

10. A contractor shall ensure that
- (a) all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;
 - (b) all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand;
 - (c) the designs of formwork and support work structures are done with close reference to the structural design drawings and where any uncertainty exists, the structural designer should be consulted;
 - (d) all drawings pertaining to the design of formwork or support work structures are kept on the site and are available on request by an inspector, contractor, client, client's agent or employee;
 - (e) all equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used;
 - (f) all formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site;
 - (g) if, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be safely removed or reinforced immediately;
 - (h) adequate precautionary measures are taken in order to-
 - (i) secure any deck panels against displacement; and
 - (ii) prevent any person from slipping on support work or formwork due to the application of formwork or support work release agents;
 - (i) as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;
 - (j) upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight, but also any imposed loads and not removed until authorization has been given by the competent person contemplated in paragraph (a);
 - (k) provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level;
 - (l) all employees required to erect, move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely; and
 - (m) the foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads such that the formwork and support work structure is stable.

Excavation work

- 11.(1) A contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

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- (2) A contractor shall evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.
- (3) Every contractor who performs excavation work shall-
- (a) take suitable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;
 - (b) not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where-
 - (i) the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
 - (ii) such an excavation is in stable material: Provided that-
 - (a) permission being given in writing by the appointed competent person contemplated in sub regulation (1) upon evaluation by him or her of the site conditions; and
 - (b) where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations shall be decisive and such a decision shall be noted in writing and signed by both the competent person contemplated in sub regulation (1) and the professional engineer or technologist, as the case may be;
 - (c) take steps to ensure that the shoring or bracing contemplated in paragraph (b) is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;
 - (d) ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the safety of, any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;
 - (e) ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, the steps are taken that may be necessary to ensure the stability of such building, structure or road and the safety of persons;
 - (f) cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;
 - (g) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed, and shall before the commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved;
 - (h) cause every excavation, including all bracing and shoring, to be inspected-
 - (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, by the competent person contemplated in sub regulation (1), 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, client, client's agent, contractor or employee upon request;
 - (i) cause every 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, to 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;
 - (j) ensure that all precautionary measures as stipulated for confined spaces as determined in the General Safety Regulations promulgated by Government Notice No.R.1031 of 30 May 1986, as amended, are complied with when entering any excavation;

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- (k) ensure that, where the excavation work involves the use of explosives, a method statement is developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for excavation work and that the procedures therein are followed; and
- (l) cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

Demolition work

- 12.(1) A contractor shall appoint a competent person in writing to supervise and control all demolition work on site.
- (2) A contractor shall ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed.
- (3) During the demolition, a competent person shall check the structural integrity of the structure at intervals determined in the method statement contemplated in sub regulation (2), in order to avoid any premature collapses.
- (4) Every contractor who performs demolition work shall-
 - (a) with regard to a structure being demolished, take steps to ensure that-
 - (i) no floor, roof or other part of the structure is overloaded with debris or material in a manner which would render it unsafe;
 - (ii) all reasonably practicable precautions are taken to avoid the danger of the structure collapsing when any part of the framing of a framed or partly framed building is removed, or when reinforced concrete is cut; and
 - (iii) precautions are taken in the form of adequate shoring or such other means as may be necessary to prevent the accidental collapse of any part of the structure or adjoining structure;
 - (b) not require or permit any person to work under overhanging material or structure, which has not been adequately supported, shored or braced;
 - (c) take steps to ensure that any support, shoring or bracing contemplated in paragraph (b), is designed and constructed so that it is strong enough to support the overhanging material;
 - (d) where the stability of an adjoining building, structure or road is likely to be affected by demolition work on a structure, take such steps as may be necessary to ensure the stability of such structure or road and the safety of persons;
 - (e) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in anyway, be affected by the work to be performed, and shall before the commencement of demolition work that may affect any such service, take the steps that may be necessary to render circumstances safe for all persons involved;
 - (f) cause every stairwell used and every floor where work is being performed in a building being demolished, to be adequately illuminated by either natural or artificial means;
 - (g) cause convenient and safe means of access to be provided to every part of the demolition site in which persons are required to work; and
 - (h) erect a catch platform or net above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.
- (5) A contractor shall ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless the area is effectively protected.

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- (6) Waste and debris shall not be disposed from a high place by a chute unless the chute-
 - (a) is adequately constructed and rigidly fastened;
 - (b) if inclined at an angle of more than 45 degrees to the horizontal, is enclosed on its four sides;
 - (c) if of the open type, is inclined at an angle of less than 45 degrees to the horizontal;
 - (d) where necessary, is fitted with a gate at the bottom end to control the flow of material; and
 - (e) is discharged into a container or an enclosed area surrounded by barriers.
- (7) A contractor shall ensure that every chute used to dispose of rubble is designed in such a manner that rubble does not free-fall and that the chute is strong enough to withstand the force of the debris traveling along the chute.
- (8) A contractor shall ensure that equipment is not used on floors or working surfaces, unless such floors or surfaces are of sufficient strength to support the imposed loads.
- (9) Where the risk assessment indicates the presence of asbestos, a contractor shall ensure that all asbestos related work is conducted in accordance with the provisions of the Asbestos Regulations promulgated by Government Notice No R.155 of 10 February 2002, as amended.
- (10) Where the risk assessment indicates the presence of lead, a contractor shall ensure that all lead related work is conducted in accordance with the provisions of the, Lead Regulations promulgated by Government Notice No. R.236 of 28 February 2002, as amended.
- (11) Where the demolition work involves the use of explosives, a method statement is to be developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for demolition work and the procedures therein are adhered to.
- (12) A contractor shall ensure that all waste and debris is as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

Tunneling

- 13.(1) Any contractor performing tunneling activities shall comply with the Tunneling Regulations as published under the Mine Health and Safety Act, 1996 (Act No.29 of 1996), as amended.
- (2) Notwithstanding the provisions of sub regulation (1), no person shall enter a tunnel, which has a height dimension less than 800 mm.

Scaffolding

- 14.(1) Every contractor using access scaffolding, shall ensure that such scaffolding, when used, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act.
- (2) A contractor shall ensure that all scaffolding work operations are carried out under the supervision of a competent person who has been appointed in writing and that all scaffold erectors, team leaders and inspectors are competent to carry out their work.

Suspended platforms

- 15.(1) A contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.
- (2) No contractor shall use or permit the use of a suspended platform, unless-

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- (a) the design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;
 - (b) he or she is in possession of a certificate of system design issued by a professional engineer, certificated engineer or a professional technologist for the use of the suspended platform system; and
 - (c) he or she is, prior to the commencement of the work, in possession of an operational compliance plan developed by a competent person based on the certificate of system design contemplated in paragraph (b) and applicable to the environment in which the system is being used, this must include proof of the-
 - (i) competent person who has been appointed for supervision;
 - (ii) competency of erectors, operators and inspectors;
 - (iii) operational design calculations which should comply with the requirements of the system design certificate;
 - (iv) performance test results;
 - (v) sketches indicating the completed system with the operational loading capacity of the platform;
 - (vi) procedures for and records of inspections having been carried out; and
 - (vii) procedures for and records of maintenance work having been carried out:

Provided that sub regulation (2) shall only become applicable six months from the date of promulgation of these regulations.
- (3) A contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional engineer, certificated engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director before commencement of the use of the system and must further indicate the intended type of work the system would be used for.
 - (4) A contractor need not re-submit a copy of the certificate of system design contemplated in sub regulation (3) for every new project: Provided that the environment in which the system is being used does not change to such an extent that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional engineer, certificated engineer or professional technologist shall be decisive.
 - (5) A contractor shall ensure that the outriggers of each suspended platform-
 - (a) are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and
 - (b) have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.
 - (6) A contractor shall ensure that-
 - (a) the parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;
 - (b) the suspension wire rope and the safety wire rope are separately connected to the outrigger;
 - (c) each person on a suspended platform is provided with and wears a safety harness as a fall prevention device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;
 - (d) the hand or power driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;
 - (e) the machinery referred to in paragraph (d) is so situated that it is easily accessible for inspection;
 - (f) the rope connections to the outriggers are vertically above the connections to the working platform; and

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- (g) where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.
- (7) A contractor shall ensure that the suspended platform-
- (a) is suspended as near as possible to the structure to which work is being done and, except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;
 - (b) is fitted with anchorage points to which workers shall attach the lanyard of the safety harness worn and used by the worker and such anchorage connections shall have sufficient strength to withstand any potential load applied to it; and
 - (c) is fitted with a conspicuous notice easily understandable by all workers working with the suspended platform, showing the maximum mass load which the suspended platform can carry.
- (8) A contractor shall cause-
- (a) the whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification;
 - (b) the whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;
 - (c) the performance test contemplated in paragraph (b) to be done by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices before they are used, every time suspended platforms are erected;
 - (d) the performance test contemplated in paragraph (b) of the whole installation of the suspended platform to be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 per cent of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly.
- (9) Notwithstanding the provisions of sub regulation (8), the contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person contemplated in sub regulation (8) before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.
- (10) A contractor shall ensure that the suspended platform supervisor appointed in terms of the provisions of sub regulation (1), or the suspended platform inspector mentioned in sub regulation (1), carries out a daily inspection of all the equipment prior to use, including establishing whether-
- (a) all connection bolts are secure;
 - (b) all safety devices are functioning;
 - (c) all safety devices are not tampered with or vandalized;
 - (d) the maximum mass load of the platform is not exceeded;
 - (e) the occupants in the suspended platform are using safety harnesses which have been properly attached;
 - (f) there are no visible signs of damage to the equipment; and
 - (g) all reported operating problems have been attended to.
- (11) A contractor shall ensure that all inspection and performance test records are kept on the construction site at all times and made available to an inspector, client, client's agent or employee upon request.
- (12) A contractor shall ensure that all employees required to work or to be supported on a suspended platform are-

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- (a) physically and psychologically fit to work safely in such an environment by being in possession of a medical certificate of fitness;
- (b) competent in conducting work related to suspended platforms safely;
- (c) trained or had received training which include at least-
 - (i) how to access and egress the suspended platform safely;
 - (ii) how to correctly operate the controls and safety devices of the equipment;
 - (iii) information on the dangers related to the misuse of safety devices; and
 - (iv) information on the procedures to be followed in the case of-
 - (aa) an emergency;
 - (bb) the malfunctioning of equipment;
 - (cc) the discovery of a suspected defect in the equipment; and
 - (v) instructions on the proper use of safety harnesses.
- (13) Where the outrigger is to be moved, the contractor shall ensure that only persons trained and competent to effect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.
- (14) A contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

Boatswain's chairs

- 16.(1) A contractor shall ensure that every boatswain's chair or similar device is securely suspended and is constructed in such a manner so as to prevent any occupant from falling there from.
- (2) The contractor shall ensure that an inspection is carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out on a daily basis prior to use.

Material hoists

- 17.(1) A contractor shall ensure that every material hoist and its tower have been constructed of sound material in accordance with the generally accepted technical standards and are strong enough and free from defects.
- (2) A contractor shall cause the tower of every material hoist to be-
 - (a) erected on firm foundations and secured to the structure or braced by steel wire guy ropes and to extend to such a distance above the highest landing as to allow a clear and unobstructed space of at least 900 mm for overtravel;
 - (b) enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material hoist, with walls or other effective means to a height of at least 2100 mm from the ground or floor level; and
 - (c) provided with a door or gate at least 2100 mm in height at each landing and such door or gate shall be kept closed, except when the platform is at rest at such a landing.
- (3) A contractor shall cause-
 - (a) the platform of every material hoist to be designed in such a manner that it shall safely contain the loads being conveyed and that the combined weight of the platform and the load does not exceed the designed lifting capacity of the hoist;
 - (b) the hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist; and

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- (c) every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when the power is not being supplied to the hoisting machinery.
- (4) No contractor shall require or permit trucks, barrows or material to be conveyed on the platform of a material hoist and no person shall so convey trucks, barrows or material unless such articles are so secured or contained in such a manner that displacement thereof cannot take place during movement.
- (5) A contractor shall cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material hoist, to be affixed around the base of the tower and at each landing.
- (6) A contractor of a material hoist shall not require or permit any person to operate such a hoist, unless the person is competent in the operation thereof.
- (7) No contractor shall require or permit any person to ride on a material hoist.
- (8) A contractor shall cause every material hoist-
 - (a) to be inspected on a daily basis by a competent person who has been appointed in writing and has the experience pertaining to the erection and maintenance of material hoists or similar machinery;
 - (b) inspection contemplated in paragraph (a), to include the determination of the serviceability of the entire material hoist including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices;
 - (c) inspection results to be entered and signed in a record book, which shall be kept on the premises for that purpose;
 - (d) to be properly maintained and that the maintenance records in this regard are kept on site.

Batch plants

- 18.(1) A contractor shall ensure that all batch plants are operated and supervised by a competent person who has been appointed in writing.
- (2) A contractor shall ensure that the placement and erection of a batch plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.
- (3) A contractor shall ensure that all devices to start and stop a batch plant are provided and that these devices are-
 - (a) placed in an easily accessible position; and
 - (b) constructed in such a manner as to prevent accidental starting.
- (4) The contractor shall ensure that the machinery and plant selected is suitable for the task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means.
- (5) No person shall be permitted to remove or modify any guard or safety equipment relating to a batch plant, unless authorized to do so by the appointed person as contemplated in sub regulation (1).
- (6) A contractor shall ensure that all persons authorized to operate the batch plant are fully-
 - (a) aware of all the dangers involved in the operation thereof; and
 - (b) conversant with the precautionary measures to be taken in the interest of health and safety.

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- (7) No person supervising or operating a batch plant shall authorize any other person to operate the plant, unless such person is competent to operate such machinery.
- (8) A contractor shall ensure that all precautionary measures as stipulated for confined spaces in the General Safety Regulations promulgated by Government Notice No.R.1031 dated 30 May 1986, as amended, are adhered to when entering any silo.
- (9) A contractor shall ensure that a record is kept of any repairs or maintenance to a batch plant and that it is made available, on site, to an inspector, client, client's agent or employee upon request.
- (10) A contractor shall ensure that all lifting machines and lifting tackle used in the operation of a batch plant complies with the requirements of the Driven Machinery Regulations promulgated by Government Notice No.R.295 dated 26 February 1988, as amended.
- (11) A contractor shall ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo, as contemplated in the Electrical Installation Regulations promulgated by Government Notice No. R. 2271 dated 11 October 1995, as amended.

Explosive powered tools

- 19.(1) No contractor shall use or permit any person to use an explosive powered tool, unless-
 - (a) it is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
 - (b) the firing mechanism is so designed that the explosive powered tool will not function unless-
 - (i) it is held against the surface with a force of at least twice its weight; and
 - (ii) the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle:

Provided that the provisions of this sub regulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.
- (2) A contractor shall ensure that-
 - (a) only cartridges suited for the explosive powered tool and the work to be performed are used;
 - (b) the explosive powered tool is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed;
 - (c) that the safety devices are in proper working order prior to use;
 - (d) when not in use, the explosive powered tool and the cartridges are locked up in a safe place, which is inaccessible to unauthorised persons;
 - (e) the explosive powered tool is not stored in a loaded condition;
 - (f) a warning notice is displayed in a conspicuous manner wherever the explosive powered tool is used;
 - (g) the issuing and collection of cartridges and nails or studs is-
 - (i) controlled and done in writing by a person having been appointed in writing; and
 - (ii) recorded in a register and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges;
- (3) No contractor shall permit or require any person to use an explosive powered tool unless such person has been-
 - (a) provided with and uses suitable protective equipment; and
 - (b) trained in the operation, maintenance and use of such a tool.

Cranes

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20. Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No.R.533 of 16 March 1990, as amended, a contractor shall ensure that where tower cranes are used-
- (a) account is taken of the effects of wind forces on the structure;
 - (b) account is taken of the bearing capacity of the ground on which the tower crane is to stand;
 - (c) the bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;
 - (d) the tower cranes are erected at a safe distance from excavations;
 - (e) there is sufficient clear space available for erection, operation and dismantling;
 - (f) the tower crane operators are competent to carry out the work safely; and
 - (g) the tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness.

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Construction vehicles and mobile plant

- 21.(1) A contractor shall ensure that all construction vehicles and mobile plants-
- (a) are of an acceptable design and construction;
 - (b) are maintained in a good working order;
 - (c) are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
 - (d) are operated by workers who-
 - (i) have received appropriate training and been certified competent and been authorised to operate such machinery; and
 - (ii) are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
 - (e) have safe and suitable means of access;
 - (f) are properly organised and controlled in any work situation by providing adequate signaling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
 - (g) are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers;
 - (h) where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
 - (i) are equipped with an electrically operated acoustic signaling device and a reversing alarm; and
 - (j) are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.
- (2) A contractor shall furthermore ensure that
- (a) no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
 - (b) every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
 - (c) the traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
 - (d) every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;
 - (e) all construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
 - (f) bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
 - (g) whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
 - (h) tools and material are secured in order to prevent movement when transported in the same compartment with employees;
 - (i) vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
 - (j) when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

Electrical installations and machinery on construction sites

22. Notwithstanding the provisions contained in the Electrical Installation Regulations promulgated by Government Notice No.R.2920 of 23 October 1992 and the Electrical Machinery Regulations

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promulgated by Government Notice No. R.1953 of 12 August 1988, respectively, as amended, a contractor shall ensure that-

- (a) before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- (b) all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;
- (c) in working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, are provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;
- (d) all temporary electrical installations are inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections are recorded in a register to be kept on site; and
- (e) the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing.

Use and temporary storage of flammable liquids on construction sites

23. Notwithstanding the provisions for the use and storage of flammable liquids as determined in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that-
 - (a) where flammable liquids are being used, applied or stored at the workplace concerned, this is done in such a manner which would cause no fire or explosion hazard, and that the workplace is effectively ventilated: Provided that where the workplace cannot effectively be ventilated-
 - (i) every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and
 - (ii) steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;
 - (b) no person smokes in any place in which flammable liquid is used or stored, and such contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
 - (c) flammable liquids on a construction site is stored in a well-ventilated reasonably fire resistant container, cage or room and kept locked with proper access control measures in place;
 - (d) an adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognized symbolic signs;
 - (e) only the quantity of flammable liquid needed for work on one day is to be taken out of the store for use;
 - (f) all containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, to be removed from the construction site and safely disposed of;
 - (g) where flammable liquids are decanted, the metal containers are bonded or earthed; and
 - (h) no flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

Water environments

- 24.(1) A contractor shall ensure that where construction work is done over or in close proximity to water, provision is made for-
 - (a) preventing workers from falling into water; and
 - (b) the rescuing of workers in danger of drowning.
- (2) A contractor shall ensure that where a worker is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the worker.

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Housekeeping on construction sites

25. Notwithstanding the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No. R2281 dated 16 October 1987, as amended, a contractor shall ensure that-
- (a) suitable housekeeping is continuously implemented on each construction site, including provisions for the-
 - (i) proper storage of materials and equipment, and
 - (ii) removal of scrap, waste and debris at appropriate intervals;
 - (b) loose materials required for use, are not placed or allowed to accumulate on the site so as to obstruct means of access to and egress from workplaces and passageways;
 - (c) waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out regulation 12(6);
 - (d) construction sites in built-up areas, adjacent to a public way, are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorized persons.
 - (e) a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe in the case of danger or possibility of persons being struck by falling objects.

Stacking and storage on construction sites

26. Notwithstanding the provisions for the stacking of articles contained in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that-
- (a) a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site;
 - (b) adequate storage areas are provided;
 - (c) there are demarcated storage areas; and
 - (d) storage areas are kept neat and under control.

Fire precautions on construction sites

27. Subject to the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No.R.2281 of 16 October 1987, as amended, every contractor shall ensure that-
- (a) all appropriate measures are taken to avoid the risk of fire;
 - (b) sufficient and suitable storage is provided for flammable liquids, solids and gases;
 - (c) smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
 - (d) in confined spaces and other places in which flammable gases, vapours or dust can cause danger-
 - (i) only suitably protected electrical installations and equipment, including portable lights, are used;
 - (ii) there are no flames or similar means of ignition;
 - (iii) there are conspicuous notices prohibiting smoking;
 - (iv) oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and
 - (v) adequate ventilation is provided;
 - (e) combustible materials do not accumulate on the construction site;
 - (f) welding, flame cutting and other hot work are done only after the appropriate precautions as required have been taken to reduce the risk of fire;

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- (g) suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;
- (h) the fire equipment contemplated in paragraph (g) is inspected by a competent person, who has been appointed in writing, in the manner indicated by the manufacturer thereof;
- (i) a sufficient number of workers are trained in the use of fire-extinguishing equipment;
- (j) where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;
- (k) the means of escape is kept clear at all times;
- (l) there is an effective evacuation plan providing for all
 - (i) persons to be evacuated speedily without panic;
 - (ii) persons to be accounted for, and
 - (iii) plant and processes to be shut down; and
- (m) a siren is installed and sounded in the event of a fire.

Construction welfare facilities

- 28.(1) Notwithstanding the construction site provisions contained in the Facilities Regulations promulgated by Government Notice No. R. 1593 of 12 August 1988, as amended, a contractor shall, depending on the number of workers and the duration of the work, provide at or within reasonable access of every construction site, the following clean and maintained facilities:
- (a) at least one shower facility for every 15 workers;
 - (b) at least one sanitary facility for every 30 workers;
 - (c) changing facilities for each sex; and
 - (d) sheltered eating areas.
- (2) A contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

Approved Inspection Authorities

29. (1) The Chief Inspector may approve as an Inspection Authority any organization that has been accredited in terms of the provision of the Act and these regulations.
- (2) The Chief Inspector may at any time withdraw any approval of an approved inspection authority, subject to section 35 of the Act.

Offences and penalties

30. Any person who contravenes or fails to comply with any of the provisions of regulations 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28, shall be guilty of an offence and liable upon conviction to a fine or to imprisonment for a maximum of 12 months and, in the case of a continuous offence, to an additional fine of R200 for each day on which the offence continues or additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall not exceed 90 days.

Repeal of regulations

31. The following regulations are herewith repealed:
- (a) regulations 11, 12, 13, 13C, 13D, 13E, 13F and 13G of the, General Safety Regulations promulgated by Government Notice No. R.1031 of 30 May 1986;
 - (b) regulations 19 and 20 of the, Driven Machinery Regulations promulgated by Government Notice No.R.295 of 26 February 1988; and

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- (c) regulations 14 of the, General Administrative Regulations promulgated by Government Notice No. R.1449 of 6 September 1996.

Short title

32. These regulations shall be known as the Construction Regulations, 2003.

ANNEXURE 1

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

Regulation 3(1) of the Draft Construction Regulations

NOTIFICATION OF CONSTRUCTION WORK

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

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

2. Principal contractor's compensation registration number:

3(a) Name and postal address of client:

(c) Name and tel no of client's contact person:

4(a) Name and postal address of architect/consulting engineer(s) for the project:

(b) Name and tel no of architect's or consulting engineer's contact person:

5. Name and telephone number of the site contact person:

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

7. Nature of the construction work:

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Witness:



-
8. Expected commencement date: _____
9. Expected completion date: _____
10. Estimated maximum number of persons on the construction site:

11. Planned number of subcontractors on the construction site:

-

 Principal Contractor

 Date

 Client

 Date

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

BIDDER:

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Witness:



Database: Government Gazettes
Gazette No: 25207
Notice No: 1020
Regulation Gazette No: 7721
Gazette: GOV
Date: 20030718
Full text:
Text:

DEPARTMENT OF LABOUR

No. R. 1020
18 July 2003

Occupational Health and Safety Act, 1993

Incorporation of Safety Standards in the Construction Regulations, 2003

Under section 44 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), I, Membathisi Mphumzi Sherpard Mdladlana, Minister of Labour, after consultation with the Advisory Council for Occupational Health and Safety, hereby incorporate in the Construction Regulations, 2003 the health and safety standards specified in the Schedule.

M S Mdladlana
Minister of Labour.

SCHEDULE

1. Regulation 14(1)

The South African Bureau of Standards' Code of Practice SABS 085, as amended, entitled "The Design, Erection, Use and Inspection of Access Scaffolding".

2. Regulation 15(2)(a)

The South African Bureau of Standards' Standard Specification SABS EN 1808, as amended, entitled "Safety Requirements on Suspended Access Equipment - Design calculations, stability criteria, construction-tests".

The South African Bureau of Standards' Standard Front-end Specification SABS 1903, as amended, entitled "Safety Requirements on Suspended Access Equipment - Design calculations, stability criteria, construction-tests".

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ANNEXURE 7

LIST OF RISK ASSESSMENTS

BIDDER:

Initial: Authorized signatory/ies:1.

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Witness:

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List of risk assessments

Working close to water
 Aggregate/Sand Delivery
 Arc welding
 Bench grinder
 Brickwork
 Compressed gas cylinders-handling
 Compressors – Air
 Cutting of pipes
 Distribution boards – Electrical
 Drivers – of vehicles
 Electrical installation – Maintenance of
 Excavator
 Fire prevention and protection
 Form and support work
 Front end loader
 Gas welding-cutting operations
 Hand and spray painting
 Hand tools
 Kerb laying
 Laying of pipes
 Levelling – of materials
 Loading supervisor
 Loading/unloading - of trucks
 Machine operator
 Making of steel items
 Material delivery
 Material handling
 Mixer operator
 Placing concrete
 Portable ladders
 Refuelling vehicles/plant
 Scaffolding
 Site establishment
 Trenches – Digging of
 Trees – Bracing/removing if roots are damaged during excavations
 Use of portable electrical tools
 Work in confined spaces
 Working close to existing services i.e. electrical, waste water etc
 Working close to traffic
 Working close to water
 Workshops

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C3.6.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

(a) Construction Regulations, 2003

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2003 (the regulations) as promulgated in Government Gazette No 25207 and Regulation Gazette No 7721 of 18 July 2003. (A copy of the Construction Regulations is included as an Annexure in this Volume). Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Project Specifications, Schedule of Quantity and Drawings, as well as in the Employers' health and safety specifications (regulation 4(1)) of the Construction Regulations 2003, which are bound in the Contract document/will be issued separately by the Employer.

The Contractor shall in terms of regulation 5(1) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

A payment item is/Payment items are included in the Schedule of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

C3.7 REFERENCES TO THE SCOPE OF WORKS IN TERMS OF THE ENVIRONMENTAL MANAGEMENT PLAN

1. INTRODUCTION

The EMP will address the environmental impacts during the design, construction and operational phases of a project. Due regard must be given to environmental protection during the entire road project. In order to achieve this a number of environmental specifications/recommendations are made. These are aimed at ensuring that the Contractor maintains adequate control over the project in order to:

Minimise the extent of impact during construction,
 Ensure appropriate restoration of areas affected by construction.
 Prevent long term environmental degradation.

The contractor must be made aware of the environmental obligations that are stipulated in this document, and declares himself/herself to be conversant of all relevant environmental legislation. The Contractor should also be aware that the Engineer will monitor the implementation of the procedures.

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2. POLICY STATEMENT

The construction will be to the best management practices as identified to minimize the environmental impact of activities associated with the development.

3. OBJECTIVES OF THE EMP

The EMP has the following goals:

- Identifying those construction activities that may have a detrimental impact on the environment;
- Detailing the mitigation measures that will need to be taken, and the procedures for their implementation;
- Establishing the reporting system to be undertaken during the construction.

The EMP also serves to highlight specific requirements that will be monitored during the development and should the environmental impacts not have been satisfactory prevented or mitigated; corrective action will have to be taken. The document should, therefore, be seen as a guideline that will assist in minimising the potential environmental impact of activities.

4. DESIGNATED ENVIRONMENTAL OFFICER

For the purpose of the EMP, a nominated representative of the Contractor should be the designated environmental officer for the project. The nominated representative of the Contractor will therefore be responsible for ensuring that the provisions of the EMP are complied with. The Engineer will be responsible for issuing instructions to the Contractor where environmental considerations call for action to be taken. The environmental officer will submit monthly reports to the Engineer on site who will verify the information.

5. LEGAL REQUIREMENTS

Under normal circumstances and EMP would be the end result or the final stage in the EIA procedure. However, a working agreement was negotiated between the National Department of Environmental Affairs and Tourism (DEAT) and the JS Moroka Local Municipality Metropolitan Municipality. The agreement stipulates the project types the JS Moroka Local Municipality Metropolitan Municipality need to submit to DEAT for approval and those project types the JS Moroka Local Municipality Metropolitan Municipality do not need to submit for approval. For those actions that do not need approval, the JS Moroka Local Municipality Metropolitan Municipality undertook to compile generic EMP's to assist in minimising degradation to the area. The following project types fall in this non-approval category: periodic maintenance, special maintenance, rehabilitation and specific upgrades.

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6. MITIGATION MEASURES

In setting mitigation measures, the practical implications of executing these measures must be borne in mind. With early planning, both the cost and the impacts can be minimised.

6.1 Establishment of site offices

6.1.1 Site plan

The Contractor shall provide the Engineer on site with a plan detailing the layout of site offices facilities, such as chemical toilets, areas for stockpiling of material, storage of hazardous materials and provision of containers. The site offices should not be sited in close proximity to steep areas as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the site, and in particular the ablution facilities, aggregate stockpiles and hazardous material stockpiles are located as far away as possible from any water course as possible.

The site plan shall be submitted before the site hand over meeting. Read with Standard Specifications for Municipal Civil Engineering Works: Section 001 and 002.

6.1.2 Vegetation

The vegetation surrounding the site offices is to be left as intact as possible and vegetation planted at the site should be indigenous. Only trees directly affected by the works and such others as may be indicated by the Engineer in writing may be sawn off/removed.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien invader plant shall be cleared by hand before seeding. Read with Specifications: 104 – Landscaping and grassing.

6.1.3 Rehabilitation

The site offices will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas are to be removed from the site on completion of the contract. Read with Specifications Sections 001, 002 and 104.

6.1.4 Water for human consumption

Water for human consumption must be tested and treated in accordance with recommendations.

6.2 Sewage treatment

Adequate toilet facilities are to be provided. Use of the veld for this purpose shall not, under any circumstances, be allowed. The Contractor shall be entirely responsible for enforcing their

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use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer. Latrines shall be positioned within walking distance from wherever employees are employed on the works.

Save and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak always, dry composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets is to be done in consultation with the Site Engineer.

Read with Specifications 104.

6.3 Waste management

Waste management and waste minimisation must be implemented at the outset of the contract.

6.3.1 Litter

No littering by construction workers are allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site is to be kept free of litter. Read with Specifications Sections 001 and 002.

6.3.2 Removal of solid waste

Solid waste is to be stored in an appointed area for collection and disposal. A refuse control system must be established for the collection and removal of refuse to the satisfaction of the Engineer. Disposal of solid waste will be in a Department of Water Affairs and Forestry (DWAF) licensed landfill site.

6.3.3 Hazardous waste

Hazardous waste such as bitumen, tar, oils, etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care must be taken when using tar products such as tar prime or pre-coating fluid to avoid water-soluble phenols form entering the ground or contaminating water.

6.4 Soil management

6.4.1 Topsoil

The contract provides for the stripping and stockpiling of topsoil from the site for later reuse. Topsoil is considered to be of a minimum thickness of ± 300 mm of the natural soil, including all the vegetation and organic matter. The areas to be cleared of topsoil shall include the storage areas. Weeds appearing on the stockpiled topsoil shall be removed by hand before seeding.

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Soils contaminated by hazardous substances shall be disposed of in an approved Department of Water Affairs and Forestry waste disposal site.

6.4.2 Borrow material

The Contractor's attention is drawn to the requirements set forth by the Department of Mineral and Energy Affairs in terms of the submission of EMPR's for establishment, operation and rehabilitation of borrow pits and quarries. The cost of complying with the requirements shall be deemed to be included in existing rates in the schedule of quantities. Read with the Specification Section 203.

6.5 Discovery of archaeological sites, artifacts or graves

6.5.1 Archaeological site

If an artefact on site is uncovered, work in the immediate vicinity must be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The National Monuments Council must be contacted who will appoint and archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. Read with General Conditions of Contract.

6.5.2 Graves

If a grave on site is uncovered, work in the immediate vicinity must be stopped and an undertaker as well as the National Monuments Council should be contacted. The undertaker will place advertisements in the newspapers concerning the grave. He will also provide for the relocation of bones, should it be necessary. Read with General Conditions of Contract.

6.6 Stockpiled material

The Contractor shall so plan his activities that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material must be indicated and demarcated on the site plan and approved in writing by the engineer.

The area chosen shall be devoid of indigenous trees and shrubs. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition. All areas affected by stockpiling shall be landscaped, top soiled and grassed to the Engineer's approval and at the Contractor's cost.

Material milled out of the existing road surface that is temporarily stockpiled within the road reserve shall:

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- be stockpiled so as to be as inconspicuous as possible
- be prevented from contaminating water courses,
- be cleared of weeds.

In all cases, the areas for stockpiling and disposal of construction rubble shall be approved by the Engineer before such operation commences.

Read with Series 2: Earthworks – Section 203.

6.7 Fuel, diesel and other hazardous materials

6.7.1 Hazardous materials

All hazardous materials i.e. bitumen binders shall be stored in an appointed area that is fenced and has restricted entry. Storage of bituminous products shall only take place using suitable containers to the approval of the Engineer.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be taken to the supplier's production plant. No spillage of bituminous products shall be allowed on site. Affected areas shall be promptly reinstated to the satisfaction of the Engineer.

6.7.2 Fuel

Should any fuel storage tank be required on site, the Contractor shall ensure that he has complied with the necessary legal requirements for the erection of such tanks. Leakage must be avoided. The fuel and diesel must be stored in a bunded area with adequate containment (at least 1,5 times the volume of the fuel) for potential spills and leaks.

6.7.3 Oil, grease

Oil, grease and cleaning materials from the maintenance of vehicles and machinery shall be collected in a sump and sent back to the supplier or, otherwise disposed of at a registered site.

6.7.4 Cooking oil

The Contractor should ensure that sufficient fuel is available for heating and cooking purposes should this be necessary.

6.7.5 Spillages

Streams, rivers and dams must be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash

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water, organic materials and bituminous products. In the event of a spillage, prompt action must be taken by competent instances to clear the affected area.

6.8 General considerations

Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a designated register and the response noted with the date and action taken. This record must be submitted with the monthly reports.

Any avoidable non-compliance with the above-mentioned measures may be considered sufficient ground for withholding payment of part or all amounts to be paid for the said item.

7. MEASUREMENT AND PAYMENT

The Contractor shall not be separately reimbursed or compensated in respect of his compliance with the provisions of this part of the Scope of Works. All costs so incurred shall, save and except to the extent provided for the schedule of quantities under SECTION 001: GENERAL REQUIREMENTS AND CHARGES, be deemed to be included in the rates tendered for the various items of work listed in the schedule of quantities.

TABLE 1 SUMMARY OF MITIGATION MEASURES

<i>ENVIRONMENTAL COMPONENT</i>	<i>ACTIVITY</i>	<i>MITIGATION</i>	<i>RELEVANT SECTION IN SPECIFICATIONS</i>
<i>Establishment of site offices</i>	<i>Siting of offices</i>	<i>Preferred areas would be flat areas along the route. Avoid steep areas as soil erosion could increase. Avoid water courses</i>	<i>001 002.02.01</i>
	<i>Site Plan</i>	<i>Contractor will provide engineer detail of layout of site facilities within two weeks of moving to the site i.e. chemical toilets, the demarcation of areas for stockpiling of materials, storage of hazardous materials and the provision of containers. The offices shall be fenced. The site plan will be submitted before the site hand over meeting.</i>	<i>001 002</i>
<i>Site rehabilitation</i>	<i>Cleanup</i>	<i>All construction material is to</i>	<i>001</i>

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ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
		<i>be removed from the site on completion of the contract.</i>	002 104
Vegetation	On site	<i>Vegetation planted on the site should be indigenous. Only trees directly affected by works as indicated in writing by Engineer, shall be sawn off/removed</i>	104
	Weeds	<i>Clearance of weeds must be done by hand before seeding.</i>	104
	Grass cover	<i>The grass cover surrounding the construction site is to be left as intact as possible or restored to its original condition.</i>	104
Water	Available for human consumption	<i>Water for human consumption must be tested and treated in accordance with recommendations.</i>	
Soil management	Topsoil	<i>The topsoil ($\pm$ 300 mm) of any excavation shall be removed and stockpiled separately from underlying material in an appointment area</i>	203 104
	Borrow material	<i>EMPR's for borrow pits to be submitted to the Department of Mineral and Energy Affairs for approval</i>	201 203
Archaeological & Cultural sites	Discover of archaeological sites of artefacts	<i>If an artefact on site is uncovered, work in the immediate vicinity must be stopped immediately and an archaeological consultant must be contacted. Work may only resume once clearance is given in writing by the archaeologist.</i>	GCC
Graves	Discovery of graves	<i>If a grave on site is uncovered, work in the immediate vicinity must be stopped and an undertaker should be contacted</i>	GCC

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ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
Waste management	Solid & Construction waste	Solid waste is to be stored in an appointment area for collection and disposal. Disposal of waste will be in a DWAF licensed landfill, and no waste may be burnt on site.	
	Litter	The site is to be kept free of litter	001
Sewage treatment	Toilet facilities	Adequate toilet facilities are to be provided, and the siting of chemical toilets is to be done in consultation with the site engineer. Use of the veld for this purpose shall not be allowed.	001 002
Fuel, diesel & hazardous materials	Hazardous Materials	All hazardous materials i.e. bitumen binders will be stored in an appointed area that is fenced and has restricted entry. No spoiling of bituminous products on site, over embankments, in borrow pits or any burning. No spillage of bituminous products shall be allowed on site.	
	Fuels	All fuel tanks will be stored in an appointed area. Leakage will be avoided.	
	Cooking fuel	The Contractor should ensure that sufficient fuel is available for heating and cooking purposes should this be necessary.	
	Oil, grease	Oil, grease and cleaning materials from maintenance of vehicles shall be collected in a sump and sent back to supplier.	

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ENVIRONMENTAL COMPONENT	ACTIVITY	MITIGATION	RELEVANT SECTION IN SPECIFICATIONS
	Spillages	Streams, rivers or dams must be protected against spillages of pollutants mentioned in 6.7 (e). In the event of a spillage, prompt action must be taken to clear the affected area.	
General considerations	Lines of authority	A nominated representative of the contractor will be the designated environmental officer for the site.	RELEVANT SECTION IN SPECIFICATIONS
	Reports	The environmental officer will submit monthly reports to the Engineer who will verify the information	
	Complaints	Complaints received regarding activities on the construction site pertaining to the environment should be recorded in a designated register, and the response noted with the date and action taken. This record must be submitted with the monthly report	

BIDDER:

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Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART C4 SITE INFORMATION

1.	NATURE OF GROUND AND SUBSOIL CONDITIONS	283
2.	LOCALITY PLAN.....	285
3.	BID DRAWINGS.....	286

BIDDER:

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SITE INFORMATION

1. NATURE OF GROUND AND SUBSOIL CONDITIONS

For the purposes of the Contract it will be deemed that, prior to submitting his Bid, the Contractor acquainted himself fully with the information and data provided within the geotechnical report made available for inspection by bidders during the bidding period and, subject to the provisions of the Conditions of Contract, the Contractor shall have no claim against the Employer in respect of geotechnical or subsurface conditions encountered during the course of the Contract.

BIDDER:

DR. JSMLM:

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Witness:



DR. JS MOROKA LOCAL MUNICIPALITY

DEPARTMENT NAME: *TECHNICAL SERVICES*

CONTRACT NO: *BID NO: JSM-W21/20-21/W23*

FOR THE

CONSTRUCTION OF MARAPYANE BULK PIPELINE TO NTWANE SECTION.

PART C4 : SITE INFORMATION

C4.1: LOCALITY PLAN

C4.2: BID DRAWINGS

BIDDER:

DR. JSMLM:

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SITE INFORMATION

C4.1: LOCALITY PLAN

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C4: SITE INFORMATION

C4.2 BID DRAWINGS

- 21005-00 LIST OF DRAWINGS**
- 21005-01 NAME BOARD**
- 21005-02 LOCALITY PLAN**
- 21005-03 OVERALL LAYOUT**
- 21005-04 SITE LAYOUT**
- 21005-05 BULK PIPELINE OFFTAKE TO NTWANE LONGITUDINAL SECTION**
- 21005-06 FLOW CONTROL VALVE CHAMBER DETAILS 315mm**
- 21005-07 FLOW CONTROL VALVE CHAMBER DETAILS 160mm**
- 21005-08 AIR VALVE CHAMBER DETAILS**
- 21005-09 SCOUR VALVE CHAMBER DETAILS**
- 21005-010 BULK WATER METER CHAMBER**
- 21005-011 PIPE BEDDING DETAILS**
- 21005-012 THRUST BLOCK DETAILS**
- 21005-013 PIPEMARKER DETAILS**
- 21005-014 ROAD CROSSING DETAILS**

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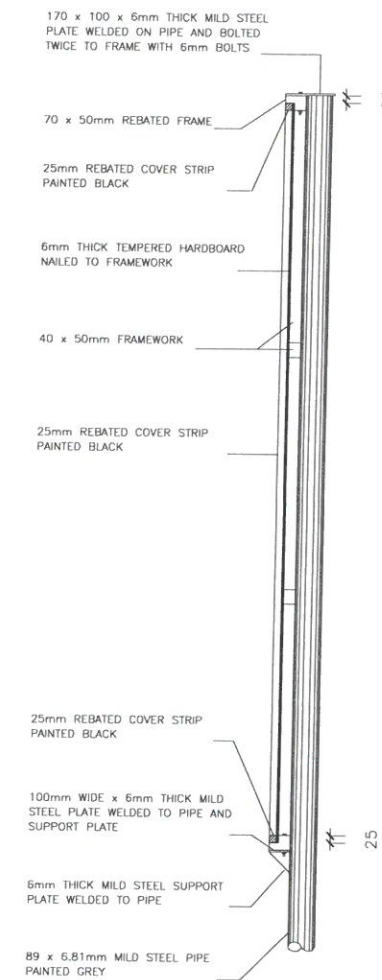
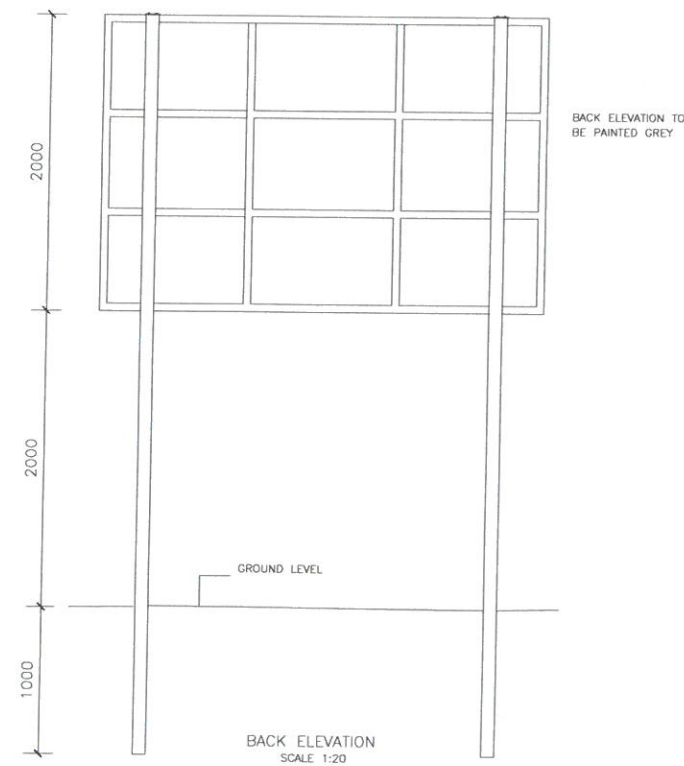
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LIST OF DRAWINGS

DRAWING NO.	DESCRIPTION	SHEET NO.
21005/00	LIST OF DRAWINGS	1 OF 1
21005/01	NAME BOARD DETAILS	1 OF 1
21005/02	LOCALITY MAP	1 OF 1
21005/03	OVERALL LAYOUT	1 OF 1
21005/04	SITE LAYOUT	1 OF 1
21005/05	PIPELINE LONG SECTIONS	4 OF 4
21005/06	FLOW CONTROL VALVE CHAMBER Ø315mm	1 OF 1
21005/07	FLOW CONTROL VALVE CHAMBER Ø160mm	1 OF 1
21005/08	AIR VALVE CHAMBER	1 OF 1
21005/09	SCOUR VALVE CHAMBER	1 OF 1
21005/10	BULK WATER METER CHAMBER	1 OF 1
21005/11	PIPE BEDDING DETAILS	1 OF 1
21005/12	THRUST BLOCK DETAILS	1 OF 1
21005/13	PIPE MARKER DETAILS	1 OF 1
21005/14	ROAD CROSSING DETAILS	1 OF 1

					NOTES		STAMP		DESIGNED BY: F.M. CHECKED BY: A.C. DRAWN BY: T.S. CHECKED BY: J.M. APPROVED BY: ALEX. CHUSWA SIGNATURE: _____		CLIENT  DE J.S. MOROKA LOCAL MUNICIPALITY TEL: 013 973 1390/1101 PRIVATE BAG 40012 FAX: 013 973 2463 STABURWA 9472		CONSULTANT  244 RISSIK STREET PRETORIA, 0001 0699 TEL: 015 297 5906 FAX: 086 046 2744 EMAIL: sape@hweng.co.za		PROJECT NAME BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION		DRAWING No. 21005-00		SCALE NTS	
B 06/2021 FOR TENDER No DATE REVISION CONSULT DIR											REVISION No. B		SHEET No. SHEET 1 OF 1							
											DRAWING TITLE DRAWING LIST		CONTRACT No. T.B.A							



NOTES:

1. TYPEFACE TO BE USED SHALL BE HELVETICA MEDIUM OBTAINABLE FROM LETTRASET DEALERS.
2. SIZES OF LETTERING AND DIMENSIONS ARE INDICATED ON DRAWING AND SHALL BE STRICTLY ADHERED TO.
3. SHOULD THE INDICATED WORDING BE TOO LONG, IT MAY BE REDUCED PROPORTIONATELY AFTER CONSULTATION WITH THE ENGINEER.
4. CLIENT'S NAME SHALL BE BLACK LETTERING ON A GREY BACKGROUND.
5. CONTRACT DESCRIPTION SHALL BE BLACK LETTERING ON A SOFT YELLOW BACKGROUND.
6. PROFESSIONAL TITLES SHALL BE BLACK LETTERING ON A GREY BACKGROUND.
7. ALL LINES SHALL BE 8mm THICK AND PAINTED WITH BLACK PAINT.
8. TRANSFER OF COAT OF ARMS SHOWN, OBTAINABLE FROM ENGINEER.
9. GREY AND YELLOW PAINT ARE BASED ON DULUX SILTHANE SILK AS FOLLOWS :
GREY : SUEZ BLUE 4072-8
SOFT YELLOW / : SOFT YELLOW 3124-7
10. BLACK PAINT ARE BASED ON DULUX GLOSS ENAMEL AS FOLLOW :
BLACK : BLACKSTONE 4684-2

DESIGNED BY: F.M.		CLIENT: DR. J.S. MOKKA LOCAL MUNICIPALITY		CONSULTANT: HWA ENGINEERS AND PROJECT MANAGERS		PROJECT NAME: BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION		DRAWING No: 21005-01		SCALE: N.T.S.	
CHECKED BY: A.C.		PRIVATE BAG 44012		24A RESSIK STREET		DRAWING TITLE: NAME BOARD DETAILS		CONTRACT No: TBA		REVISION No: B	
DRAWN BY: T.S.		STYABUSVA 9472		PELOKVANE 0699						SHEET No: 1 OF 1	
CHECKED BY: J.M.											
APPROVED BY: ALEX CHUSWA											
SIGNATURE:											

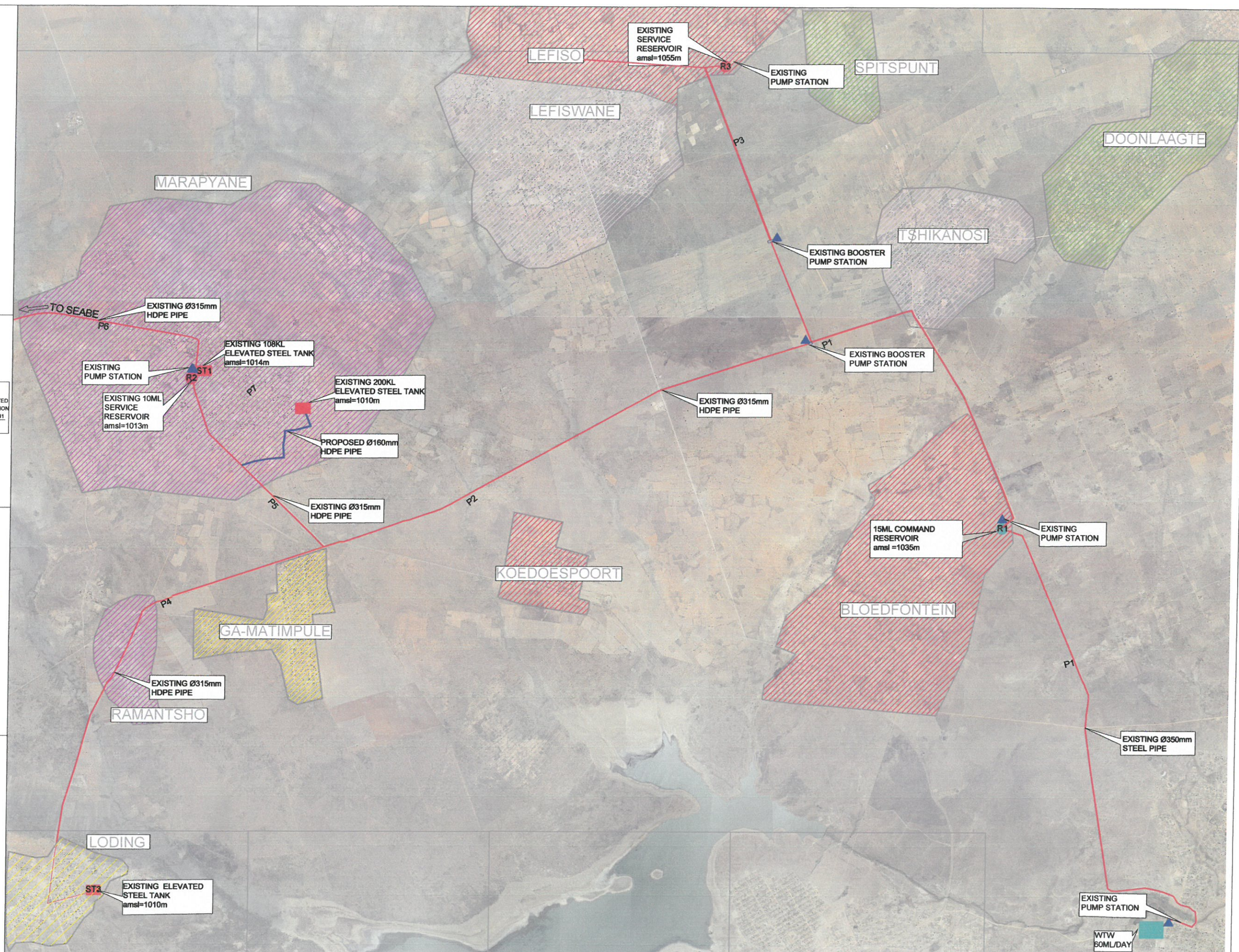
PIPELINE	PIPE TYPE	SIZE (mm)	LENGTH (Km)
P1 (EX)	STEEL	350	11.2
P2 (EX)	HDPE	350	18
P3 (EX)	HDPE	350	14.6
P4 (EX)	HDPE	350	6.1
P5 (EX)	HDPE	350	5.5
P6 (EX)	HDPE	350	-
P7 (PR)	HDPE	200	3

STORAGE	VILLAGE NAME	ELEVATION (m)	CAPACITY (Ml)
R1	BLOEDFONTEIN	1035	15
R2	MARAPYANE	1013	10
R3	LEFISO	1055	-
ST1	MARAPYANE	1014	108
ST2	MARAPYANE	1010	0.2
ST3	LODING	984	-

VILLAGE NAME	PROJECTED POPULATION FOR 2021	PROJECTED HOUSE HOLDS FOR 2021	PROJECTED POPULATION FOR 2025	PROJECTED POPULATION FOR 2030	PROJECTED POPULATION FOR 2035	PROJECTED POPULATION FOR 2041
MARAPAYANE	15944	3886	17668	20087	22838	26641

VILLAGE NAME	AADD(kd) 2021	AADD(kd) 2025	AADD(kd) 2030	AADD(kd) 2035	AADD(kd) 2040
MARAPYANE	957	1060	1205	1370	1598

EXISTING BULK SUPPLY	
PROPOSED BULK SUPPLY	
EXISTING SERVICE RESERVOIR	
EXISTING ELEVATED TANK	
EXISTING COMMAND RESERVOIR	
EXISTING WATER TREATMENTWORKS	
EXISTING PUMP STATION	

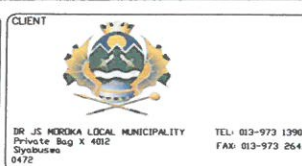


B	06/2021	FOR TENDER		J.M	
No	DATE	REVISION	CONSULT	DIR	

NOTES

STAMP

DESIGNED BY	F.M
CHECKED BY	A.C
DRAWN BY	T.S
CHECKED BY	A.C
APPROVED BY	ALEX CHIUSWA
SIGNATURE	

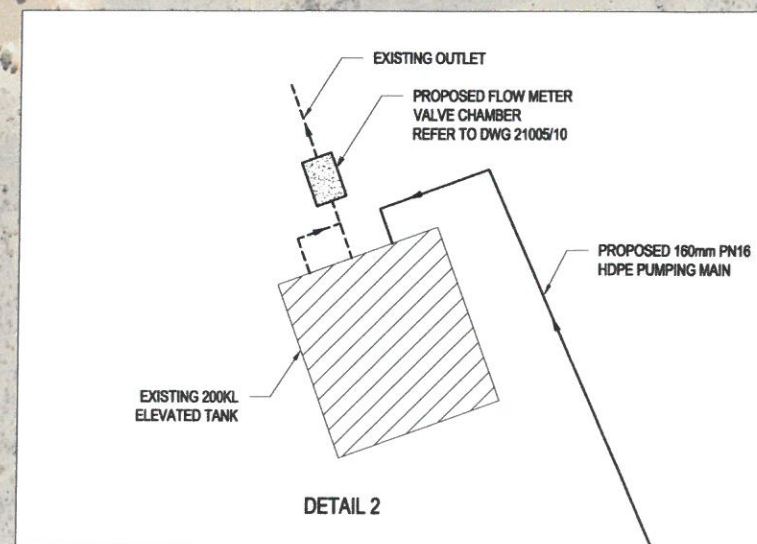


PROJECT NAME	BULK PIPELINE MARAPYANE RESEVOIR TO NTWANA SECTION
DRAWING TITLE	OVERALL LAYOUT OF EXISTING INFRASTRUCTURE

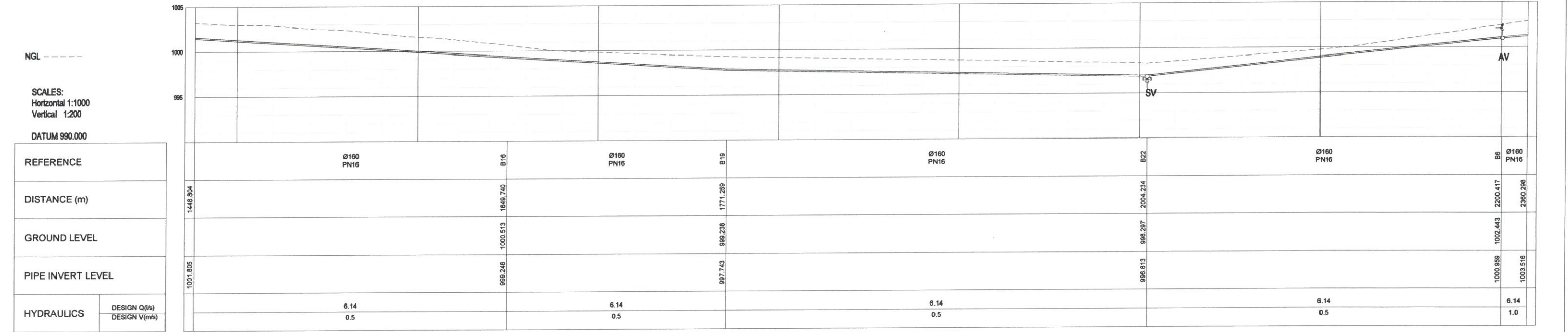
DRAWING No. 21005/03	SCALE 1:2500
	REVISION No. B
CONTRACT No. TBA	SHEET No. SHEET 1 OF 1



POINT	Y	X	LEVEL
P1	20 549.118	2 769 330.870	994.214
P2	20 532.954	2 769 316.998	994.327
B31	20 313.385	2 769 255.543	994.770
SV1	19 688.339	2 769 166.879	995.152
AV1	20 025.319	2 769 196.133	996.229
B23	19 696.570	2 769 039.231	996.583
SV2	19 127.046	2 768 504.362	998.297
B21	19 697.093	2 768 896.199	998.508
B19	19 351.078	2 768 568.292	999.238
B18	19 682.932	2 768 823.347	999.458
B15	19 669.481	2 768 698.087	1001.490
AV3	19 197.780	2 768 321.374	1002.443
AV2	19 671.468	2 768 603.176	1003.289
B32	19 258.230	2 768 171.057	1005.000
T1	19 235.445	2 768 209.807	1005.000

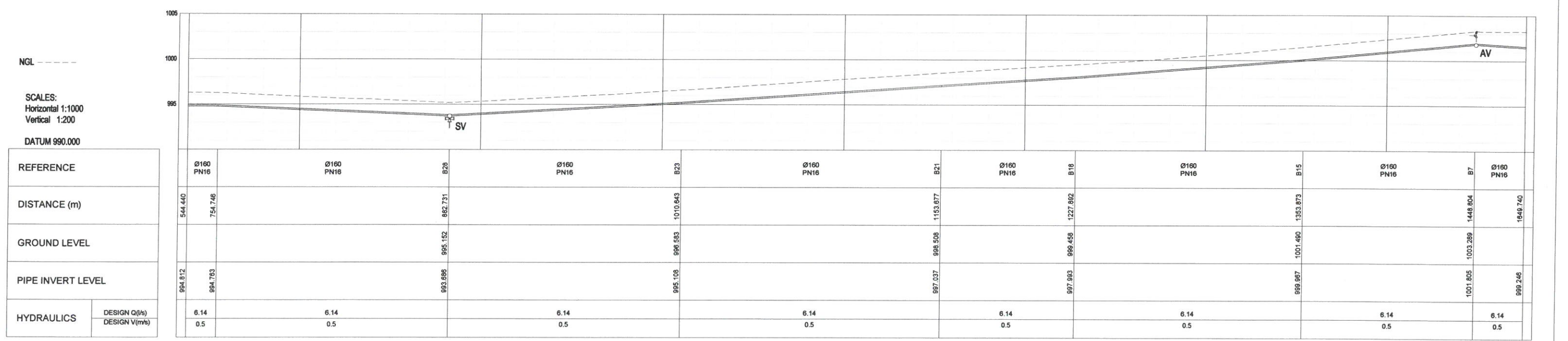


				NOTES		STAMP		DESIGNED BY T.N. CHECKED BY A.C. DRAWN BY T.N. CHECKED BY A.C. APPROVED BY ALEX CHIUWA SIGNATURE		CLIENT  DR. J.S. MOKOA LOCAL MUNICIPALITY TEL: (013) 973 1390/1391 PRIVATE BAG 44012 FAX: 015 812 4301 STARYSWA 0472		CONSULTANT  244 RISSK STREET FOLDRWANE 0509 TEL: 015 287 5906 FAX: 086 246 0744 EMAIL: info@hvmw.co.za		PROJECT NAME BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION DRAWING TITLE SITE LAYOUT		DRAWING No. 21005-04 REVISION No. B CONTRACT No. SHEET No. 1 OF 1		SCALE AS SHOWN	
B 06/2021 FOR TENDER No DATE REVISION CONSULT DIR				F.M.															



DESIGNED BY T.N.		 DR. J.S. MOKOBA LOCAL MUNICIPALITY PRIVATE BAG 44812 STANBURY 6472	 244, RISSK STREET POLKWANE 0699	PROJECT NAME BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION	DRAWING TITLE Ø160mm BULK PIPELINE LONGITUDINAL SECTION AND LAYOUT	DRAWING No. 21005/05	SCALE AS SHOWN
CHECKED BY A.C.						REVISION No. B	
DRAWN BY T.N.						SHEET No. 3 OF 4	
APPROVED BY ALEX CHIUSWA						CONTRACT No.	
SIGNATURE							

No.	DATE	REVISION	CONSULT	DIR
B	06/2021	FOR TENDER		



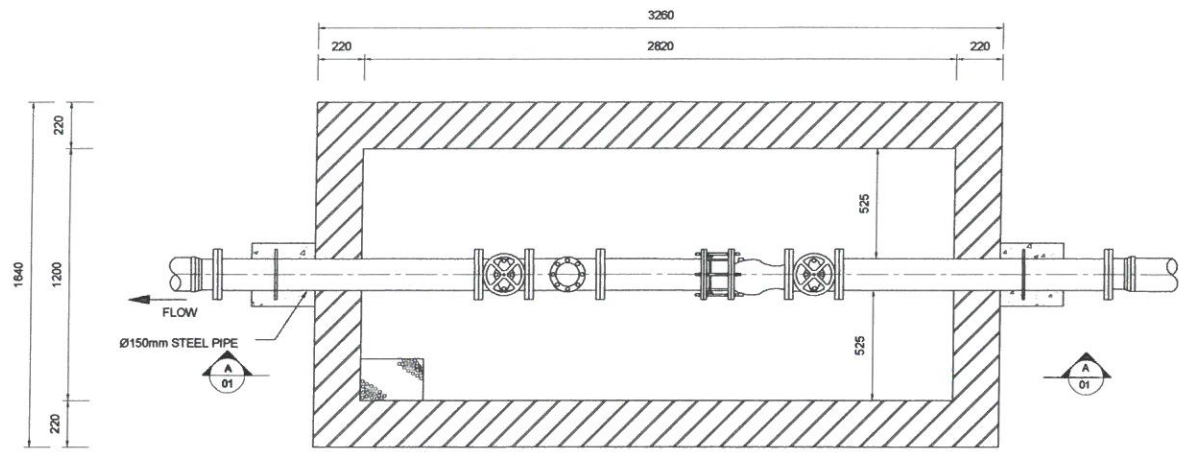
LONGSECTION OFFTAKE TO THE ELEVATED TANK
FROM 738.184 TO 1476.368

DESIGNED BY: T.N.		CLIENT: DR. J.S. MOKOBA LOCAL MUNICIPALITY		CONSULTANT: H.M.A.		PROJECT NAME: BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION		DRAWING No: 21005/05		SCALE: AS SHOWN	
CHECKED BY: A.C.		PRIVATE BAG 44012		24A ISSAK STREET				REVISION No: 0		SHEET No: 2 OF 4	
DRAWN BY: T.N.		SIYABUSWA		POLKOWANE				CONTRACT No:			
CHECKED BY: A.C.		0472		0699							
APPROVED BY: ALEX CHIUSWA											
SIGNATURE: _____											
NOTES:		STAMP:		DATE: 05/2021 FOR TENDER		DRAWING TITLE: Ø160mm BULK PIPELINE LONGITUDINAL SECTION AND LAYOUT					
F.M.				No. DATE. REVISION							
CONSULT		DIR									

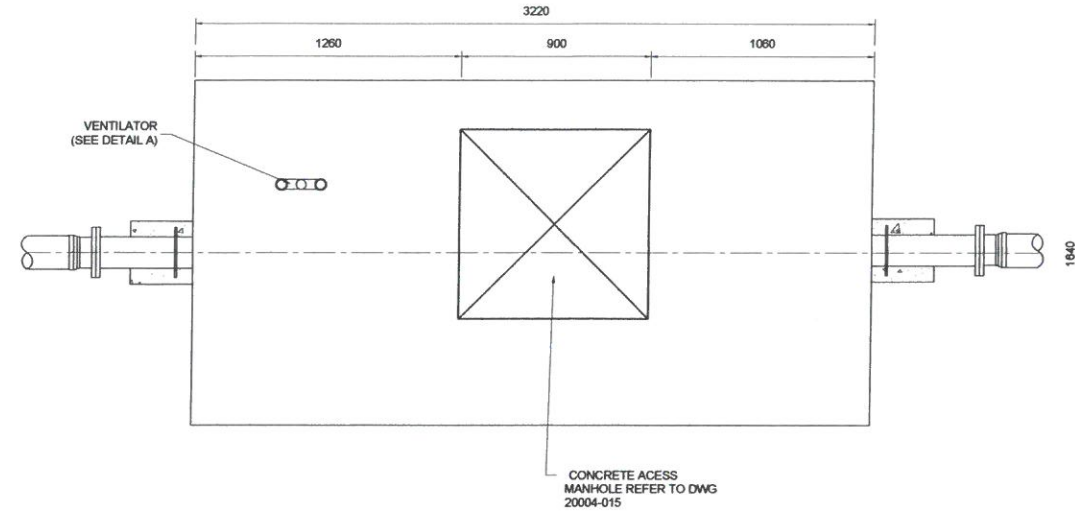


8.6 NO CONCRETE IS TO BE CAST UNTIL STEEL FIXING HAS BEEN APPROVED BY THE ENGINEER.

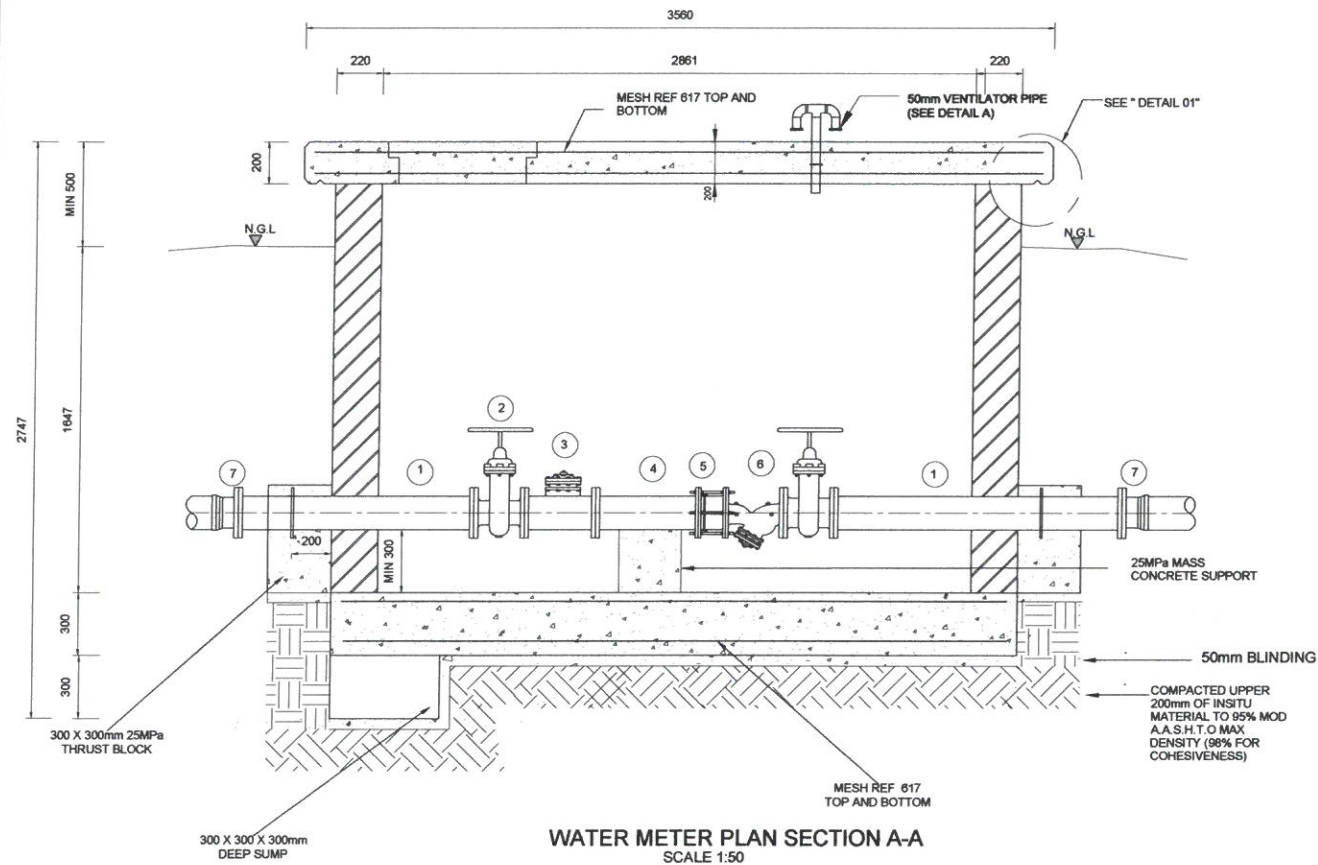
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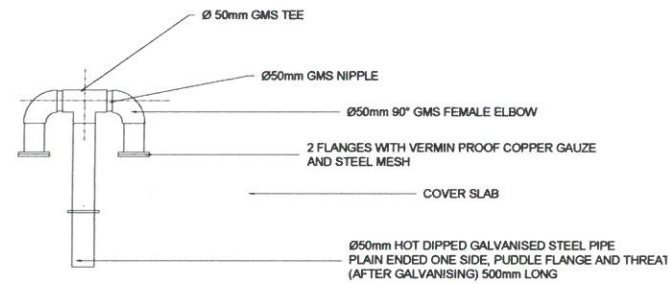
WATER METER PLAN SECTION
SCALE 1:50



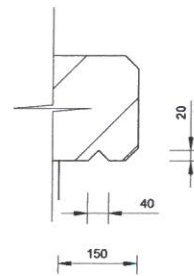
WATER METER ROOF PLAN
SCALE 1:50



WATER METER PLAN SECTION A-A
SCALE 1:50



DETAIL A VENTILATOR
SCALE 1:20



DETAIL 01
SCALE 1:20

NOTES
ALL REINFORCED CONCRETE WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH SABS 1200G AND AND PSG IN THE CONTRACT DOCUMENT AND AS MAY BE AMENDED OR ADDED THEREAFTER.

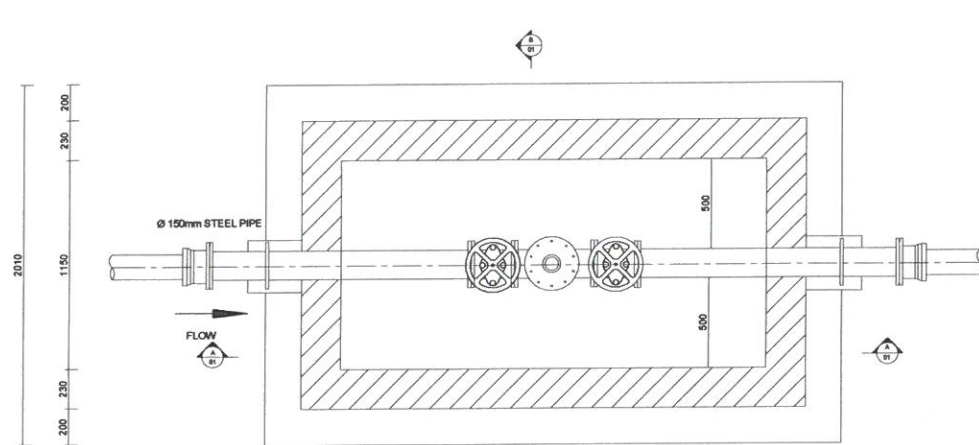
1. DATUM AS PER GENERAL LAYOUT PLAN.
2. UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METERS.
3. NO SCALING OF DIMENSIONS IS PERMITTED. ALL DIMENSIONS ARE TO BE CHECKED AND ANY DISCREPANCIES REPORTED TO THE ENGINEER IMMEDIATELY.
4. FOUNDATION
 - 4.1 DEPTHS OF ALL BASES SHALL BE SHOWN ON THE DRAWINGS AND BE FINALLY APPROVED ON SITE BY THE ENGINEER PRIOR TO PLACING OF REINFORCEMENT OR CONCRETE.
 - 4.2 ALL BASES SHALL BE CAST ON A MINIMUM LAYER OF 50mm BLINDING.
 - 4.3 BLINDING LAYERS SHALL NOT EXCEED 250mm IN THICKNESS.
5. CONCRETE
 - 5.1 CONCRETE TO BE MINIMUM STRENGTH MIX DESIGN OF:
 - 5.1.1 CLASS 15/19 IN BLINDING LAYERS;
 - 5.1.2 CLASS 30/19 IN WALL FOUNDATIONS, FLOOR AND ROOF SLABS, AND;
 - 5.1.3 CLASS 30/19 IN RESERVOIR WALL, UNLESS OTHERWISE STATED.
 - 5.2 MINIMUM COVER TO REINFORCEMENT INCLUDING LINKS SHALL BE:
 - 5.2.1 50mm FOR FOUNDATION SLABS AND FOOTINGS;
 - 5.2.2 50mm FOR WALLS AND COLUMNS, AND;
 - 5.2.3 30mm FOR ROOF SLABS ON CHAMBERS, UNLESS OTHERWISE INDICATED.
6. REINFORCING
 - 6.1 ALL REINFORCING STEEL SHALL BE WIRE BRUSHED AND KEPT CLEAN AND FREE OF ANY MILL SCALE, RUST, OIL OR ANY OTHER DELETERIOUS COMPOUNDS.
 - 6.2 WELDING ON REINFORCEMENT STEEL WILL NOT BE PERMITTED.
 - 6.3 ALL REINFORCING STEEL FIXED IN POSITION ON SITE SHALL BE

- CHECKED BY THE ENGINEER PRIOR TO CONCRETING.
7. FORM WORK
 - 7.1 FORM WORK SHALL BE ERECTED AND FIXED IN AN APPROVED MANNER AND SHALL BE INSPECTED BY THE ENGINEER PRIOR TO CONCRETING.
 - 7.2 STRIPPING TIMES OF THE FORM WORK SHALL BE AS SPECIFIED IN SABS 1200 G TABLE 2 OR AS PER THE ENGINEER'S SITE INSTRUCTIONS.
 8. GENERAL
 - 8.1 WATERTIGHTNESS TEST IS TO BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
 - 8.2 NO STRUCTURAL ALTERATIONS MAY BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
 - 8.3 THE POSITION OF THE CONSTRUCTION JOINTS IS TO BE DISCUSSED AND AGREED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY POUR.
 - 8.4 PREPARATION OF CONSTRUCTION JOINTS: BEFORE COMMENCEMENT OF THE ADJACENT POUR, THE SURFACE OF THE PREVIOUS SECTION MUST BE CLEANED, AND SURFACE LANTANCE REMOVED, EITHER BY MEANS OF WIRE BRUSHING OR HACKING WITH A SCALING HAMMER. THE SURFACE MUST THEN BE THOROUGHLY WETTED AND SLUSHED WITH A 1:1.5 SAND OR CEMENT SLURRY, WITH PLACING OF NEW CONCRETE TO FOLLOW IMMEDIATELY.
 - 8.5 ALL CONCRETE EDGES TO BE FINISHED WITH 20mm CHAMFERS.
 - 8.6 NO CONCRETE IS TO BE CAST UNTIL STEEL FIXING HAS BEEN APPROVED BY THE ENGINEER.

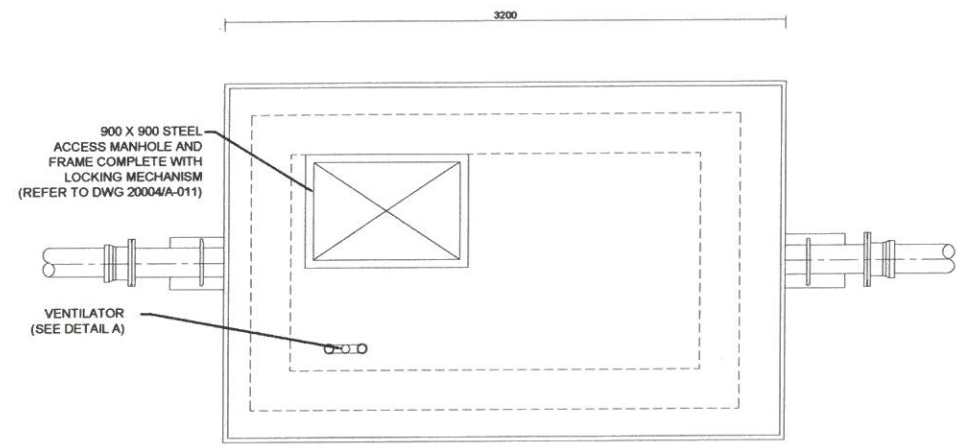
PIPE FITTING SCHEDULE					
ITEM NO.	NO. OFF	DESCRIPTION	SKETCH	MATERIAL	STEEL GRADE
1	2	Ø150mm STEEL PIPE, x 1265mm LONG WITH PUDDLE FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123
2	2	Ø150mm GATE VALVE FLANGED BOTH ENDS		STANDARD ITEM	
3	1	Ø150mm FLOW METER FLANGED BOTH ENDS		STANDARD ITEM	
4	1	Ø150mm STEEL PIPE, x 874mm LONG FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123
5	1	Ø150mm VJ COUPLING		STANDARD ITEM	
6	1	Ø150mm STRAINER FLANGED BOTH ENDS		STANDARD ITEM	
7	2	Ø150mm HDPE FLANGE ADAPTOR		STANDARD ITEM	

TABLE 10

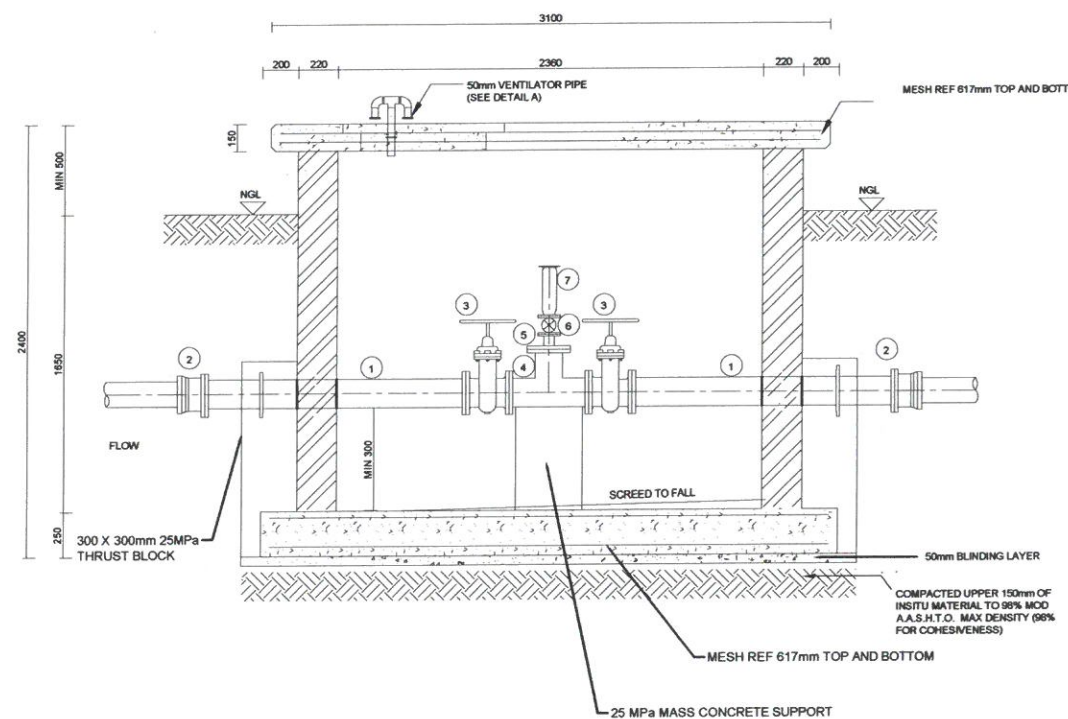
DESIGNED BY: F.W.		CHECKED BY: A.C.		DRAWN BY: O.S.		CHECKED BY: J.M.		APPROVED BY: ALEX. CHUSWA		SIGNATURE: _____	
DATE: 06/2021		FOR TENDER		F.W.		DIR		CONSULT		DIR	
REVISION											
NOTES											
STAMP											
CLIENT		DR. J.S. MOKA LOCAL MUNICIPALITY		TEL: 013 973 1390/1110		FAX: 013 973 2463		CONSULTANT		244 RISSIK STREET, POLKOVANE, 0699	
PROJECT NAME		BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION		DRAWING TITLE		FLOW METER (Ø150mm) DETAILS		DRAWING No.		21005-07	
CONTRACT No.				SCALE		AS SHOWN		REVISION No.		B	
SHEET No.		1 OF 1									



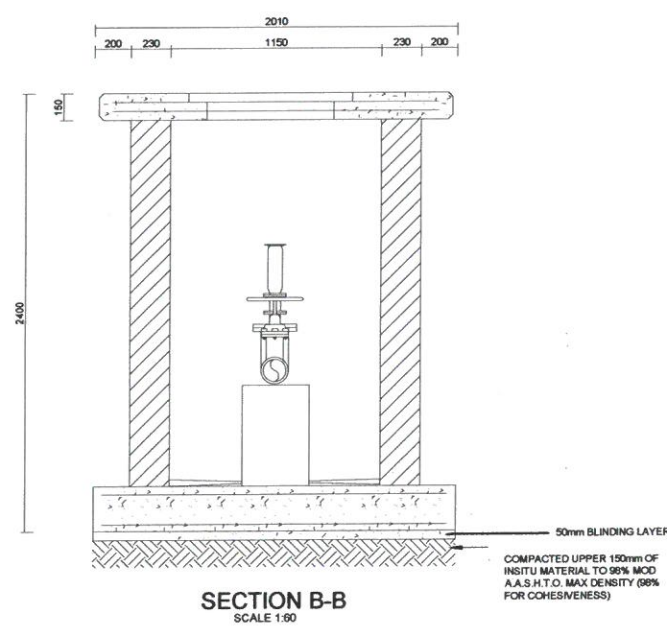
SECTION A-A
SCALE 1:50



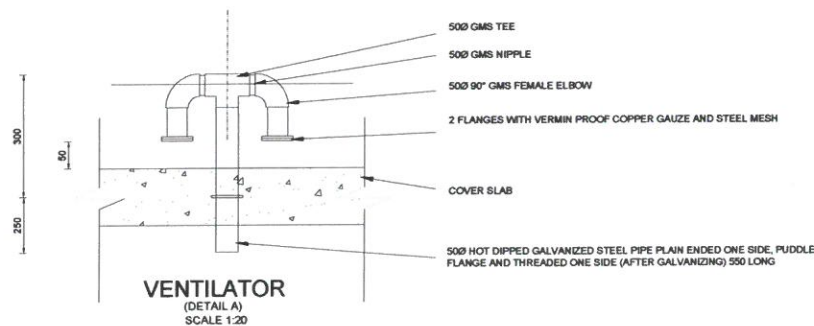
ROOF SLAB DETAIL
SCALE 1:50



SECTIONAL PLAN
SCALE 1:50



SECTION B-B
SCALE 1:50



VENTILATOR
(DETAIL A)
SCALE 1:20

- NOTES:
- ALL REINFORCED CONCRETE WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH SABS 1200G AND AND PGS IN THE CONTRACT DOCUMENT AND AS MAY BE AMENDED OR ADDED THEREAFTER.
- DATUM AS PER GENERAL LAYOUT PLAN.
 - UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METERS.
 - NO SCALING OF DIMENSIONS IS PERMITTED. ALL DIMENSIONS ARE TO BE CHECKED AND ANY DISCREPANCIES REPORTED TO THE ENGINEER IMMEDIATELY.
 - FOUNDATION
 - DEPTHS OF ALL BASES SHALL BE SHOWN ON THE DRAWINGS AND BE FINALLY APPROVED ON SITE BY THE ENGINEER PRIOR TO PLACING OF REINFORCEMENT OR CONCRETE.
 - ALL BASES SHALL BE CAST ON A MINIMUM LAYER OF 50mm BLINDING.
 - BLINDING LAYERS SHALL NOT EXCEED 250mm IN THICKNESS.
 - CONCRETE
 - CONCRETE TO BE MINIMUM STRENGTH MIX DESIGN OF:
 - CLASS 15/19 IN BLINDING LAYERS;
 - CLASS 30/19 IN WALL FOUNDATIONS, FLOOR AND ROOF SLABS, AND;
 - CLASS 30/19 IN RESERVOIR WALL, UNLESS OTHERWISE STATED.
 - MINIMUM COVER TO REINFORCEMENT INCLUDING LINKS SHALL BE:
 - 50mm FOR FOUNDATION SLABS AND FOOTINGS;
 - 50mm FOR WALLS AND COLUMNS, AND;
 - 30mm FOR ROOF SLABS ON CHAMBERS, UNLESS OTHERWISE INDICATED.
 - REINFORCING
 - ALL REINFORCING STEEL SHALL BE WIRE BRUSHED AND KEPT CLEAN AND FREE OF ANY MILL SCALE, RUST, OIL OR ANY OTHER DELETERIOUS COMPOUNDS.
 - WELDING ON REINFORCEMENT STEEL WILL NOT BE PERMITTED.
 - ALL REINFORCING STEEL FIXED IN POSITION ON SITE SHALL BE CHECKED BY THE ENGINEER PRIOR TO CONCRETING.
 - FORM WORK
 - FORM WORK SHALL BE ERECTED AND FIXED IN AN APPROVED MANNER AND SHALL BE INSPECTED BY THE ENGINEER PRIOR TO CONCRETING.
 - STRIPPING TIMES OF THE FORM WORK SHALL BE AS SPECIFIED IN SABS 1200 G TABLE 2 OR AS PER THE ENGINEERS SITE INSTRUCTIONS.
 - GENERAL
 - WATERTIGHTNESS TEST IS TO BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
 - NO STRUCTURAL ALTERATIONS MAY BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
 - THE POSITION OF THE CONSTRUCTION JOINTS IS TO BE DISCUSSED AND AGREED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY POUR.
 - PREPARATION OF CONSTRUCTION JOINTS: BEFORE COMMENCEMENT OF THE ADJACENT POUR, THE SURFACE OF THE PREVIOUS SECTION MUST BE CLEANED, AND SURFACE LANTANCE REMOVED, EITHER BY MEANS OF WIRE BRUSHING OR HACKING WITH A SCALING HAMMER. THE SURFACE MUST THEN BE THOROUGHLY WETTED AND SLUSHED WITH A 1:1.5 SAND OR CEMENT SLURRY, WITH PLACING OF NEW CONCRETE TO FOLLOW IMMEDIATELY.
 - ALL CONCRETE EDGES TO BE FINISHED WITH 20mm CHAMFERS.
 - NO CONCRETE IS TO BE CAST UNTIL STEEL FIXING HAS BEEN APPROVED BY THE ENGINEER.

PIPE FITTING SCHEDULE						
ITEM NO.	NO. OFF	DESCRIPTION	SKETCH	MATERIAL	STEEL GRADE	FLANGE DRILLING
1	2	Ø150mm STEEL PIPE, x 1050mm LONG WITH PUDDLE FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	TABLE 18
2	2	Ø150mm HDPE FLANGED ADAPTOR		STANDARD ITEM		
3	2	Ø150mm GATE VALVE FLANGED BOTH ENDS		STANDARD ITEM		
4	1	Ø150mm x Ø150mm TEE, 438mm x 219mm LONG FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
5	1	Ø80mm GATE VALVE FLANGED BOTH ENDS		STANDARD ITEM		
6	1	Ø80mm FLANGE REDUCER, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
7	1	Ø80mm AIR VALVE		STANDARD ITEM		

No	DATE	FOR TENDER	REVISION	CONSULT	DIR
B	06/2021	FOR TENDER		F.M	

NOTES

STAMP

DESIGNED BY	F.M
CHECKED BY	A.C
DRAWN BY	O.S
CHECKED BY	J.M
APPROVED BY	ALEX CHIUSWA
CHECKED BY	

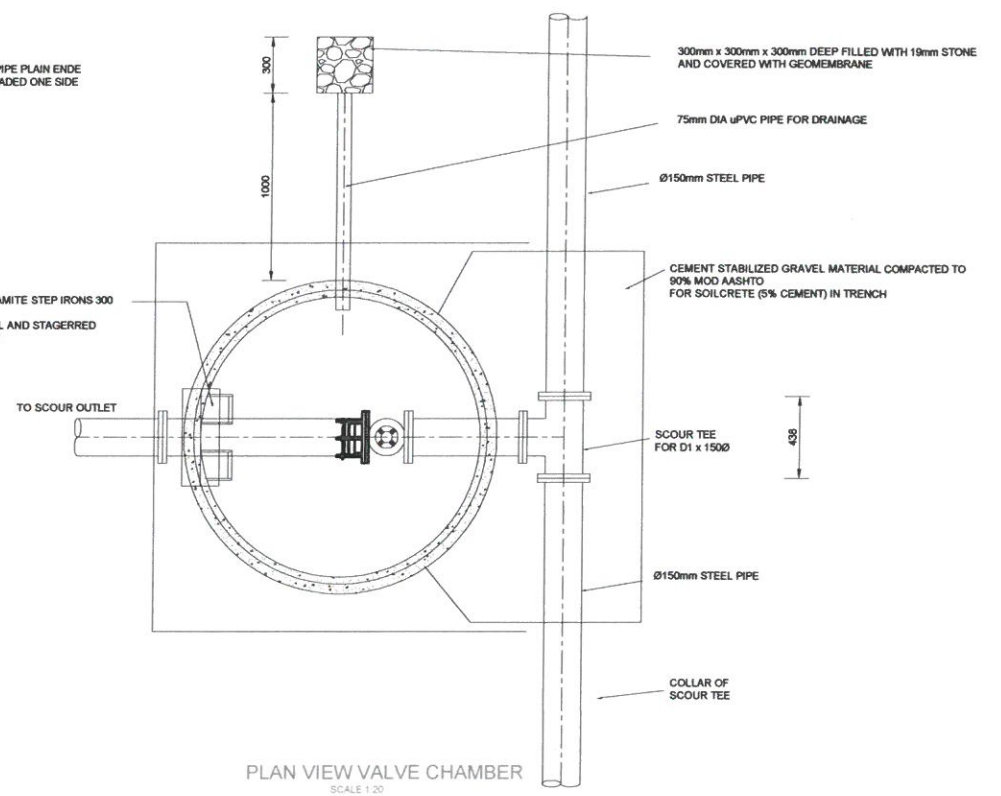
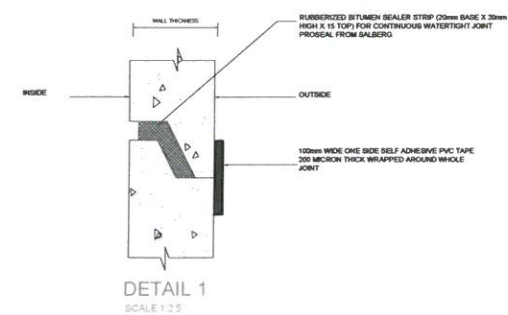
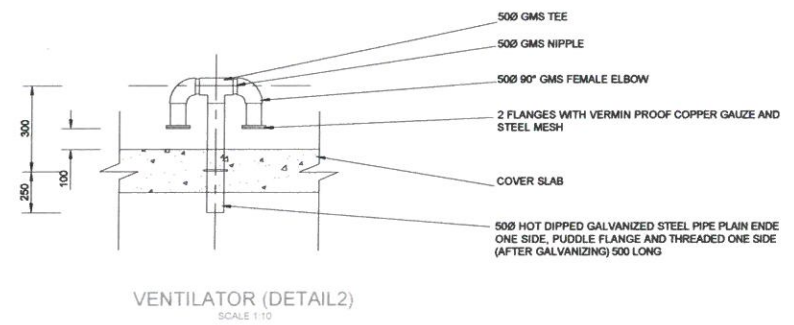
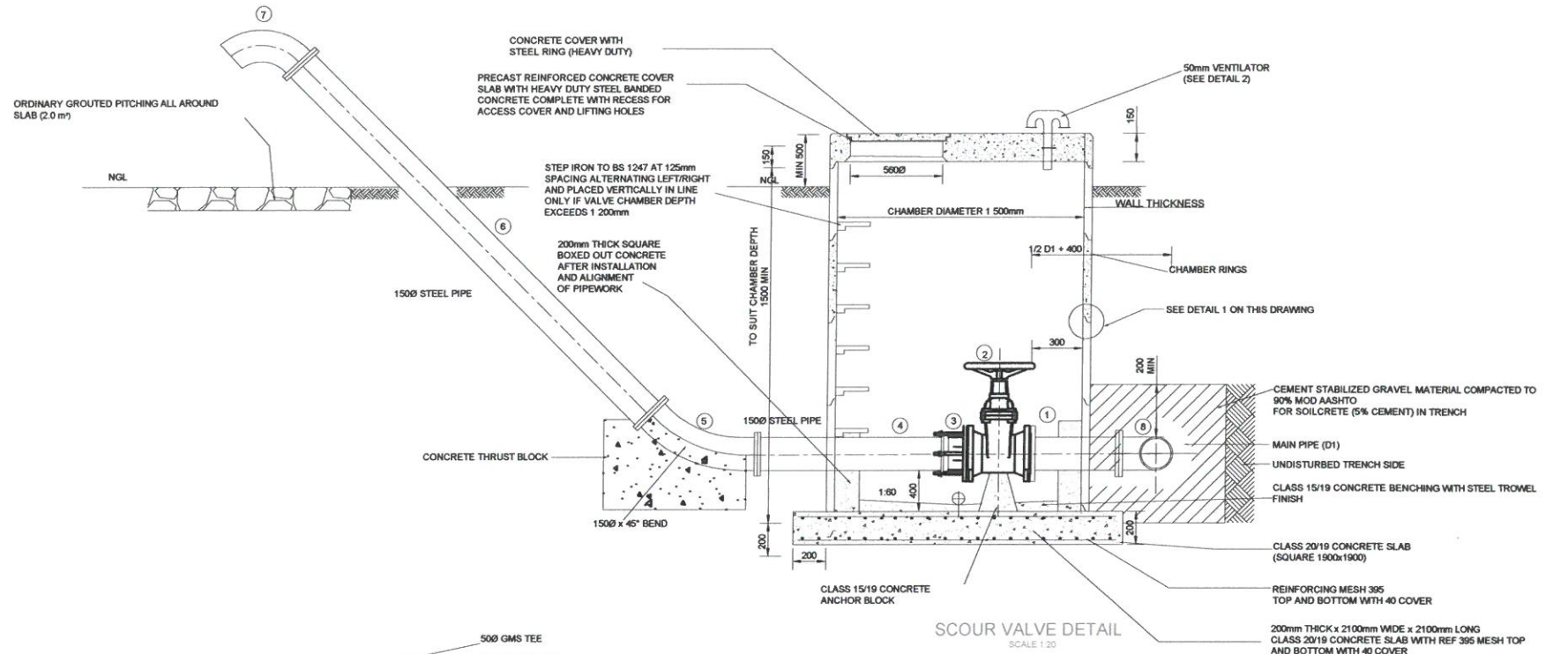
CLIENT	
DR. JS. MOKKA LOCAL MUNICIPALITY TEL: (013) 973 1390/1101 PRIVATE BAG 34012 STYABUSWA 0472	FAX: 013 973 8463

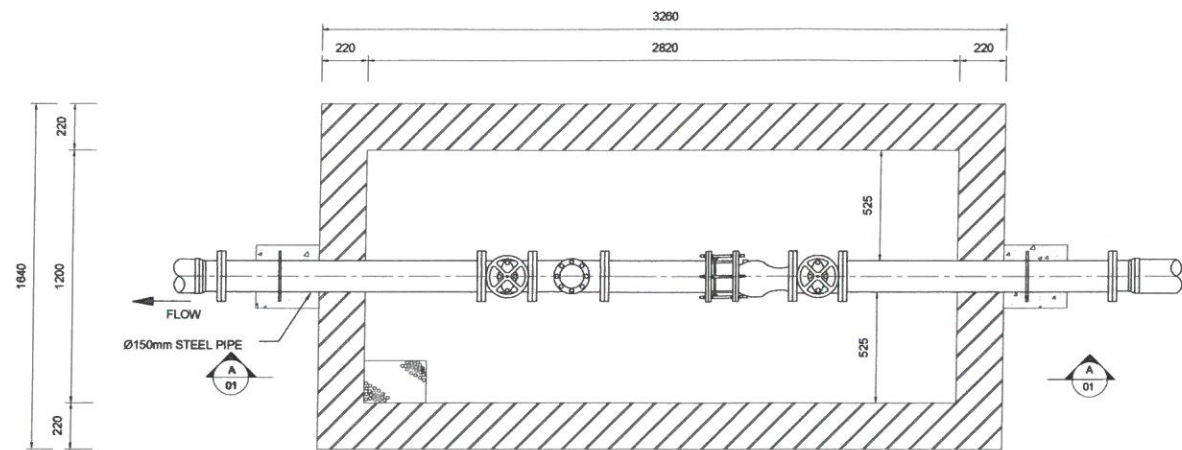
CONSULTANT	
24A RESSIK STREET POLKWANE 0699	TEL: 015 297 5906 FAX: 086 246 0744 EMAIL: admin@hema.co.za

PROJECT NAME	BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION
DRAWING TITLE	PROPOSED AIR (Ø150) VALVE DETAILS

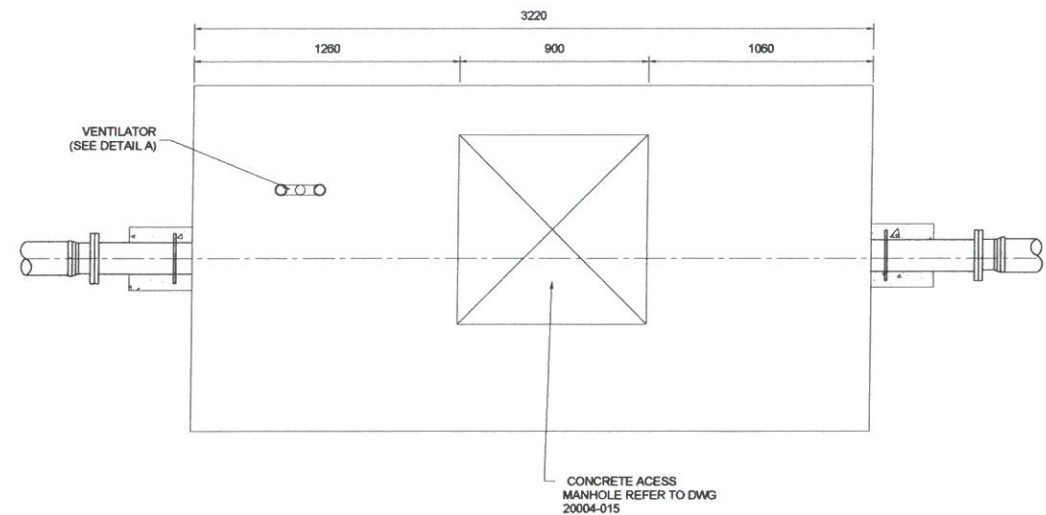
DRAWING No.	21005-08	SCALE	AS SHOWN
CONTRACT No.	TBA	REVISION No.	B
		SHEET No.	1 OF 1

PIPE FITTING SCHEDULE (Ø150mm) MAIN PIPE (D1)						TABLE 18
ITEM NO.	NO. OFF	DESCRIPTION	SKETCH	MATERIAL	STEEL GRADE	
1	2	Ø150mm STEEL PIPE, x 623mm LONG, FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
2	1	Ø150mm GATE VALVE FLANGED BOTH ENDS		STANDARD ITEM		
3	1	Ø150mm VJ COUPLING		STANDARD ITEM		
4	1	Ø150mm STEEL PIPE, x 1245mm LONG FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
5	1	Ø150mm 45° BEND FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
6	1	Ø150mm STEEL PIPE MIN 1500mm LONG FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
7	1	Ø150mm x 90° STEEL PIPE BEND FLANGE ONE END		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
8	1	Ø150mm x Ø100mm TEE, LONG FLANGED ALL ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123	
9	1	Ø150mm HOPE FLANGE ADAPTOR		STANDARD ITEM		

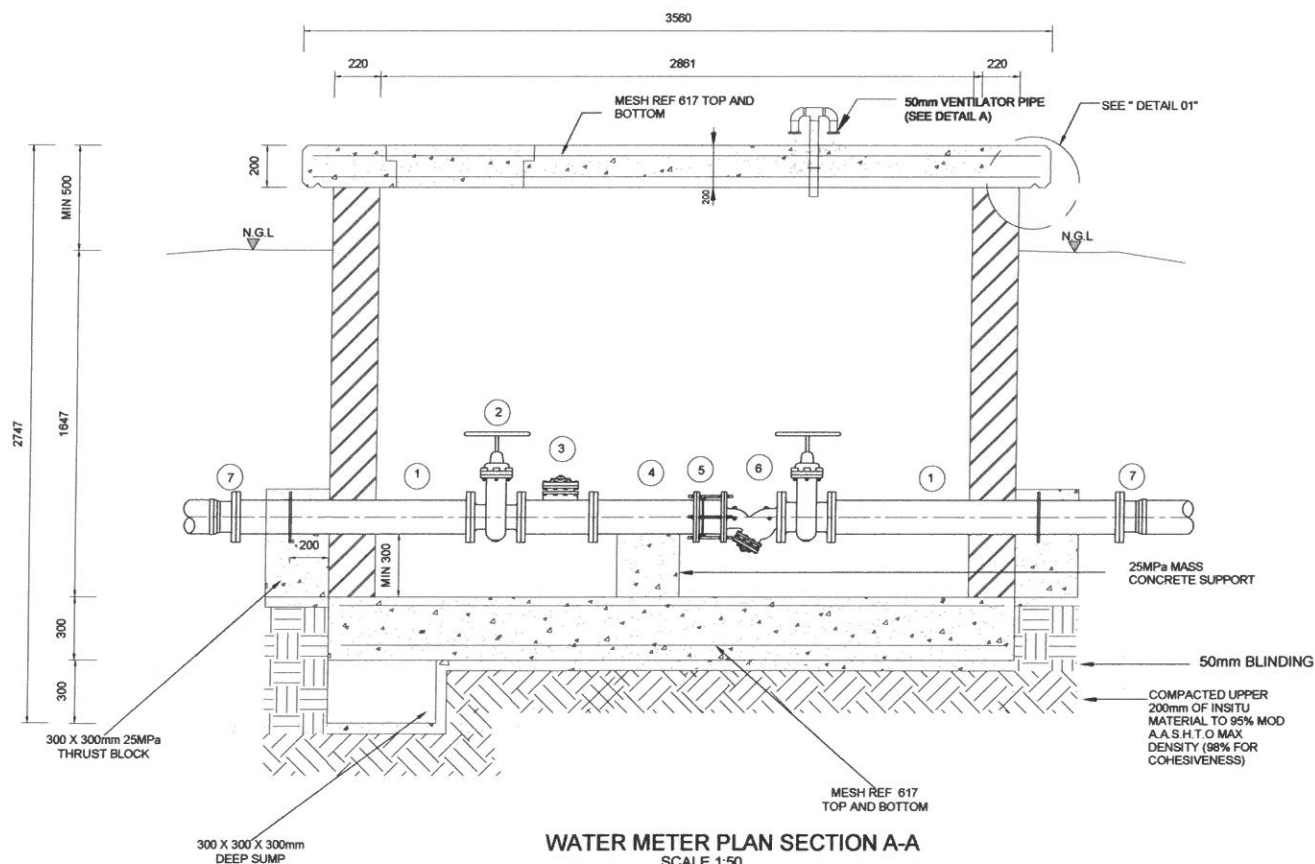




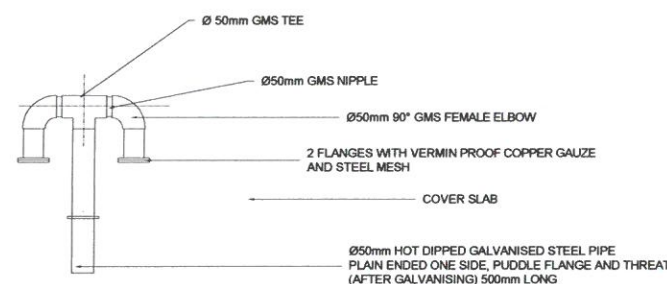
WATER METER PLAN SECTION
SCALE 1:50



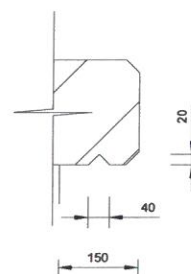
WATER METER ROOF PLAN
SCALE 1:50



WATER METER PLAN SECTION A-A
SCALE 1:50



DETAIL A VENTILATOR
SCALE 1:20



DETAIL 01
SCALE 1:20

NOTES

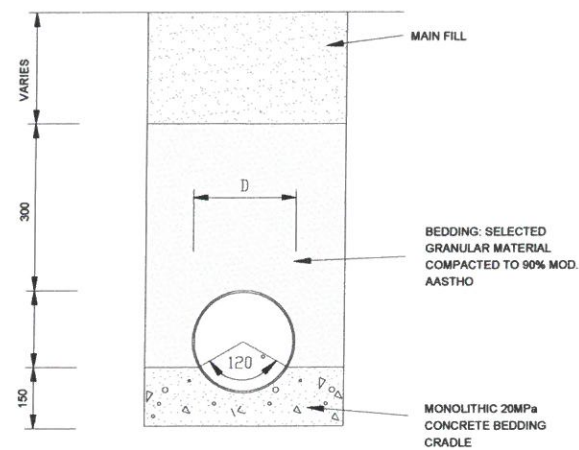
ALL REINFORCED CONCRETE WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH SABS 1200G AND AND PSG IN THE CONTRACT DOCUMENT AND AS MAY BE AMENDED OR ADDED THEREAFTER.

- DATUM AS PER GENERAL LAYOUT PLAN.
- UNLESS OTHERWISE STATED ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METERS.
- NO SCALING OF DIMENSIONS IS PERMITTED. ALL DIMENSIONS ARE TO BE CHECKED AND ANY DISCREPANCIES REPORTED TO THE ENGINEER IMMEDIATELY.
- FOUNDATION
 - DEPTHS OF ALL BASES SHALL BE SHOWN ON THE DRAWINGS AND BE FINALLY APPROVED ON SITE BY THE ENGINEER PRIOR TO PLACING OF REINFORCEMENT OR CONCRETE.
 - ALL BASES SHALL BE CAST ON A MINIMUM LAYER OF 50mm BLINDING.
 - BLINDING LAYERS SHALL NOT EXCEED 250mm IN THICKNESS.
- CONCRETE
 - CONCRETE TO BE MINIMUM STRENGTH MIX DESIGN OF:
 - CLASS 15/19 IN BLINDING LAYERS;
 - CLASS 30/19 IN WALL FOUNDATIONS, FLOOR AND ROOF SLABS, AND;
 - CLASS 30/19 IN RESERVOIR WALL, UNLESS OTHERWISE STATED.
 - MINIMUM COVER TO REINFORCEMENT INCLUDING LINKS SHALL BE:
 - 50mm FOR FOUNDATION SLABS AND FOOTINGS;
 - 50mm FOR WALLS AND COLUMNS, AND;
 - 30mm FOR ROOF SLABS ON CHAMBERS, UNLESS OTHERWISE INDICATED.
- REINFORCING
 - ALL REINFORCING STEEL SHALL BE WIRE BRUSHED AND KEPT CLEAN AND FREE OF ANY MILL SCALE, RUST, OIL OR ANY OTHER DELETERIOUS COMPOUNDS.
 - WELDING ON REINFORCEMENT STEEL WILL NOT BE PERMITTED.
 - ALL REINFORCING STEEL FIXED IN POSITION ON SITE SHALL BE CHECKED BY THE ENGINEER PRIOR TO CONCRETING.
- FORM WORK
 - FORM WORK SHALL BE ERECTED AND FIXED IN AN APPROVED MANNER AND SHALL BE INSPECTED BY THE ENGINEER PRIOR TO CONCRETING.
 - STRIPPING TIMES OF THE FORM WORK SHALL BE AS SPECIFIED IN SABS 1200 G TABLE 2 OR AS PER THE ENGINEER'S SITE INSTRUCTIONS.
- GENERAL
 - WATERTIGHTNESS TEST IS TO BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
 - NO STRUCTURAL ALTERATIONS MAY BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
 - THE POSITION OF THE CONSTRUCTION JOINTS IS TO BE DISCUSSED AND AGREED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY POUR.
 - PREPARATION OF CONSTRUCTION JOINTS: BEFORE COMMENCEMENT OF THE ADJACENT POUR, THE SURFACE OF THE PREVIOUS SECTION MUST BE CLEANED, AND SURFACE LAITANCE REMOVED, EITHER BY MEANS OF WIRE BRUSHING OR HACKING WITH A SCALING HAMMER. THE SURFACE MUST THEN BE THOROUGHLY WETTED AND SLUSHED WITH A 1:1.5 SAND OR CEMENT SLURRY, WITH PLACING OF NEW CONCRETE TO FOLLOW IMMEDIATELY.
 - ALL CONCRETE EDGES TO BE FINISHED WITH 20mm CHAMFERS.
 - NO CONCRETE IS TO BE CAST UNTIL STEEL FIXING HAS BEEN APPROVED BY THE ENGINEER.

PIPE FITTING SCHEDULE					
ITEM NO.	NO. OFF	DESCRIPTION	SKETCH	MATERIAL	STEEL GRADE
1	2	Ø150mm STEEL PIPE, x 1265mm LONG WITH PUDDLE FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123
2	2	Ø150mm GATE VALVE FLANGED BOTH ENDS		STANDARD ITEM	
3	1	Ø150mm FLOW METER FLANGED BOTH ENDS		STANDARD ITEM	
4	1	Ø150mm STEEL PIPE, x 874mm LONG FLANGE, FLANGED BOTH ENDS		EPOXY COATED STEEL	GRADE B STEEL PIPE (4.5mm THICKNESS) EPOXY COATING FOR CORROSION PROTECTION TO SANS 1123
5	1	Ø150mm VJ COUPLING		STANDARD ITEM	
6	1	Ø150mm STRAINER FLANGED BOTH ENDS		STANDARD ITEM	
7	2	Ø150mm HDPE FLANGE ADAPTOR		STANDARD ITEM	

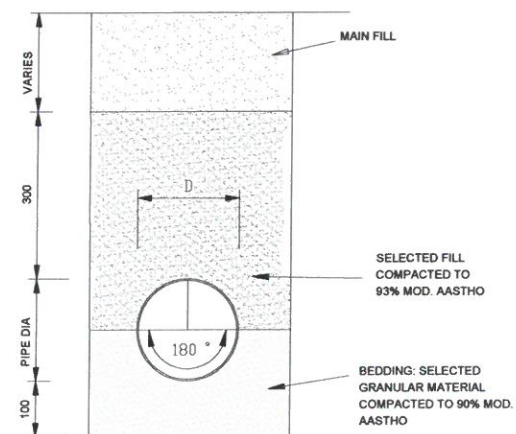
TABLE 16

DESIGNED BY: F.M. CHECKED BY: A.C. DRAWN BY: O.S. CHECKED BY: J.M. APPROVED BY: ALEX CHUSWA SIGNATURE:				CLIENT: DR. J.S. MOKO LOCAL MUNICIPALITY PRIVATE BAG 4012 STABUSVA 0492		CONSULTANT: HWA 244 RISSIX STREET FLOERWANE 0699		PROJECT NAME: BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION DRAWING TITLE: FLOW METER (Ø150mm) DETAILS		DRAWING No.: 21005-10 SCALE: AS SHOWN REVISION No.: B SHEET No.: 1 OF 1	
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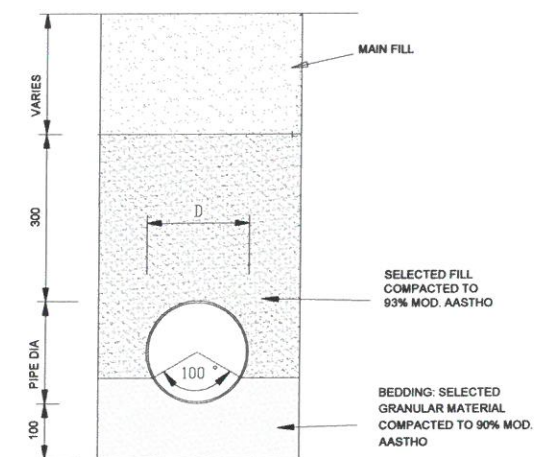
a) RIGID PIPE ON CLASS 'A' BED

SCALE: SCHEMATIC



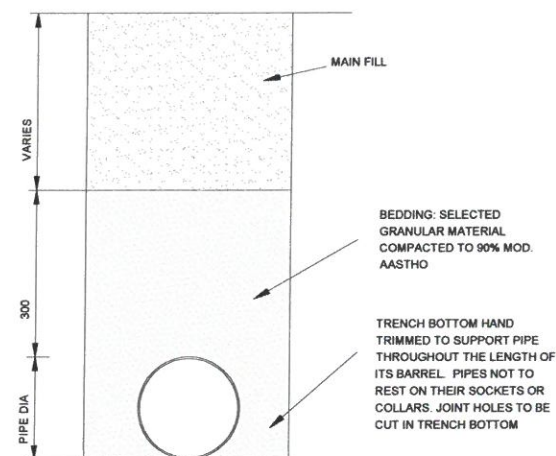
b) RIGID PIPE ON CLASS 'B' BED

SCALE: SCHEMATIC



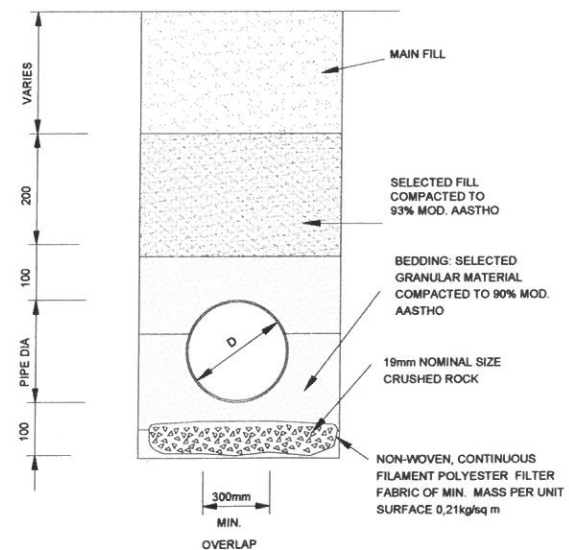
c) RIGID PIPE ON CLASS 'C' BED

SCALE: SCHEMATIC



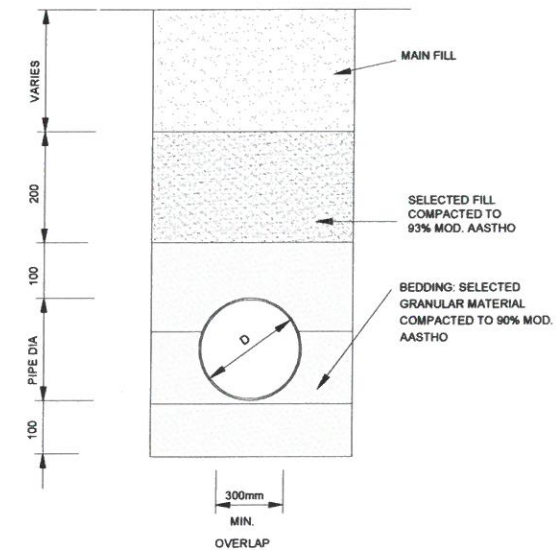
d) RIGID PIPE ON CLASS 'D' BED

SCALE: SCHEMATIC



e) TRENCH SUBSURFACE DRAIN

SCALE: SCHEMATIC



f) FLEXIBLE PIPES BEDDING

SCALE: SCHEMATIC

No	DATE	REVISION	CONSULT	DIR
1	06/2021	FOR TENDER	F.M	

NOTES

DESIGNED BY	F.M
CHECKED BY	A.C
DRAWN BY	O.S
CHECKED BY	J.M
APPROVED BY	ALEX CHIUSWA
CHECKED BY	

CLIENT
DR JS MOROKA LOCAL MUNICIPALITY TEL: 013 973 1390/1101 PRIVATE BAG 34012 STYABUSWA 6472

CONSULTANT
24A RISSIK STREET PILDKWANE 0699

PROJECT NAME
BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION

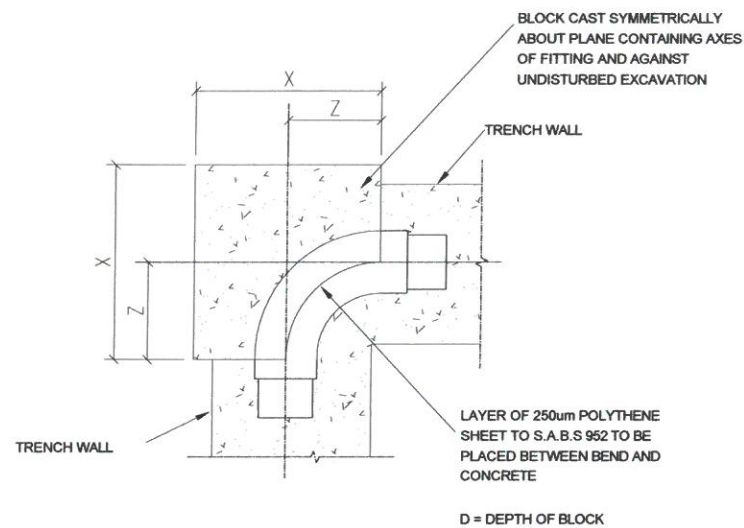
DRAWING No.
21005-11

SCALE
NTS

REVISION No.
B

CONTRACT No.
T.B.A

SHEET No.
SHEET 1 OF 1

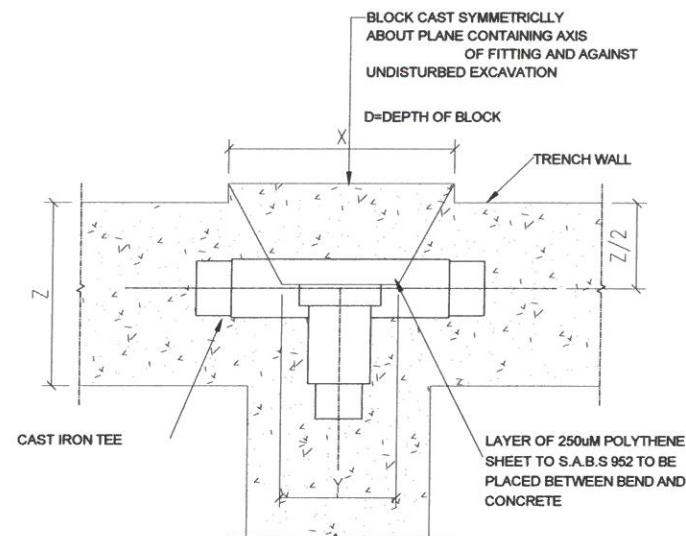


NOTE:
COUPLINGS AND FLANGES SHALL BE LEFT CLEAR OF CONCRETE

PIPE DIA.	X	D	Z
300	2700	700	1400
250	2150	650	1100
200	1600	600	800
150	1300	500	700
100	500	500	300
75	450	400	300

DIMENSIONS IN MILLIMETRES
CONCRETE 15Mpa/19mm

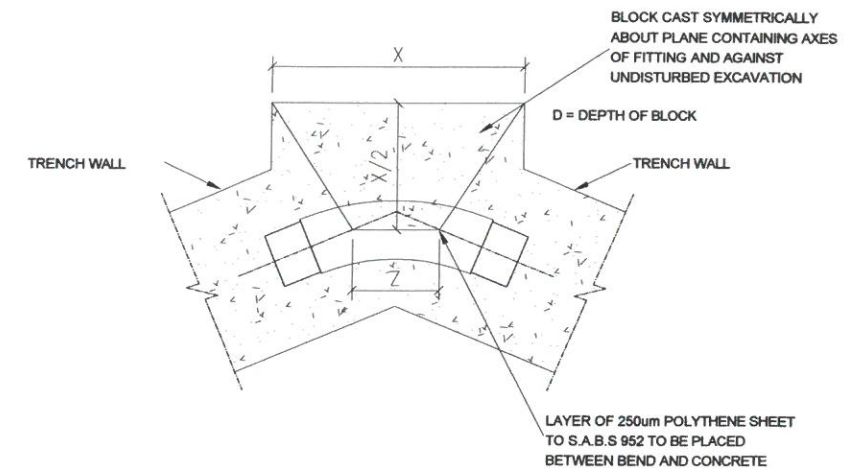
THRUST BLOCK IN PRESSURE PIPELINE FOR 90° BEND



PIPE DIA.	X	D	Z	Y
300	2700	700	1300	2000
250	2150	650	1100	1500
200	1600	600	800	1100
150	1300	500	650	900
100	500	500	300	300
75	450	400	300	250

DIMENSIONS IN MILLIMETRES
CONCRETE 20Mpa/19mm

THRUST BLOCK IN PRESSURE PIPELINE FOR TEE AND END CAP



PIPE DIA.	45° BEND			22.5° BEND			11.25° BEND		
	X	D	Z	X	D	Z	X	D	Z
300	2000	700	850	1000	700	420	1000	700	420
250	1600	650	650	760	650	300	760	650	300
200	1200	600	500	600	600	250	600	600	250
150	1000	500	400	500	500	200	500	500	200
100	350	500	150	300	400	130	300	400	130
75	350	400	150	300	300	130	300	300	130

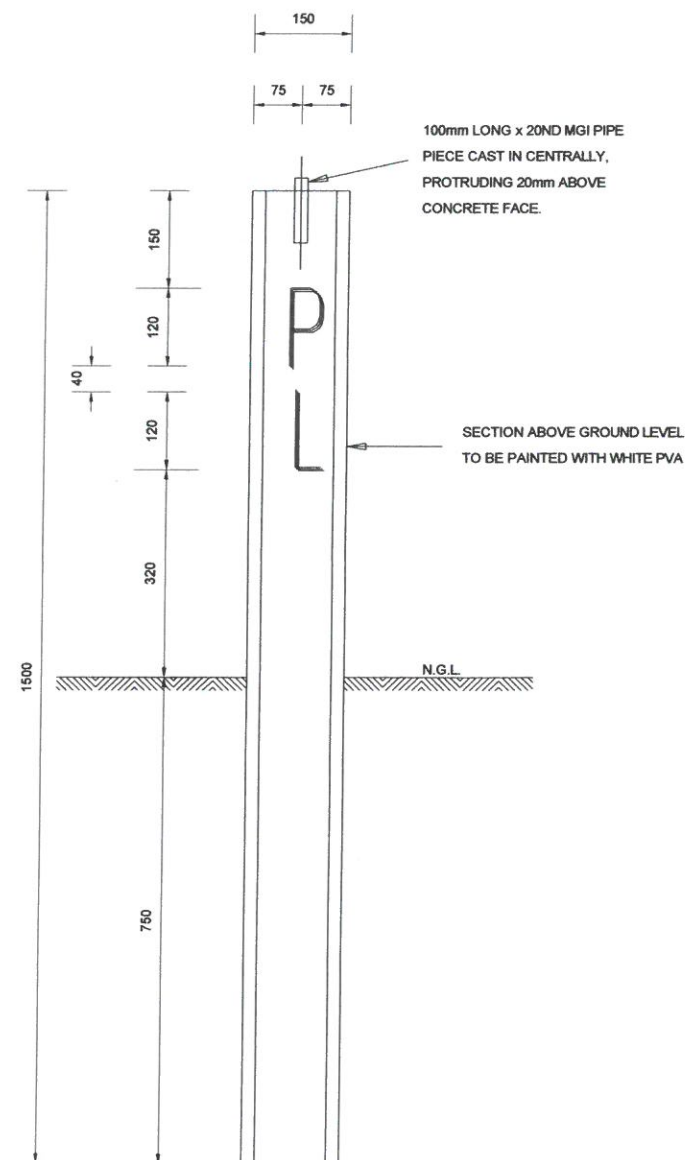
DIMENSIONS IN MILLIMETRES
CONCRETE 20Mpa/19mm

THRUST BLOCK IN PRESSURE PIPELINE FOR 45°, 22.5° AND 11.25° BEND

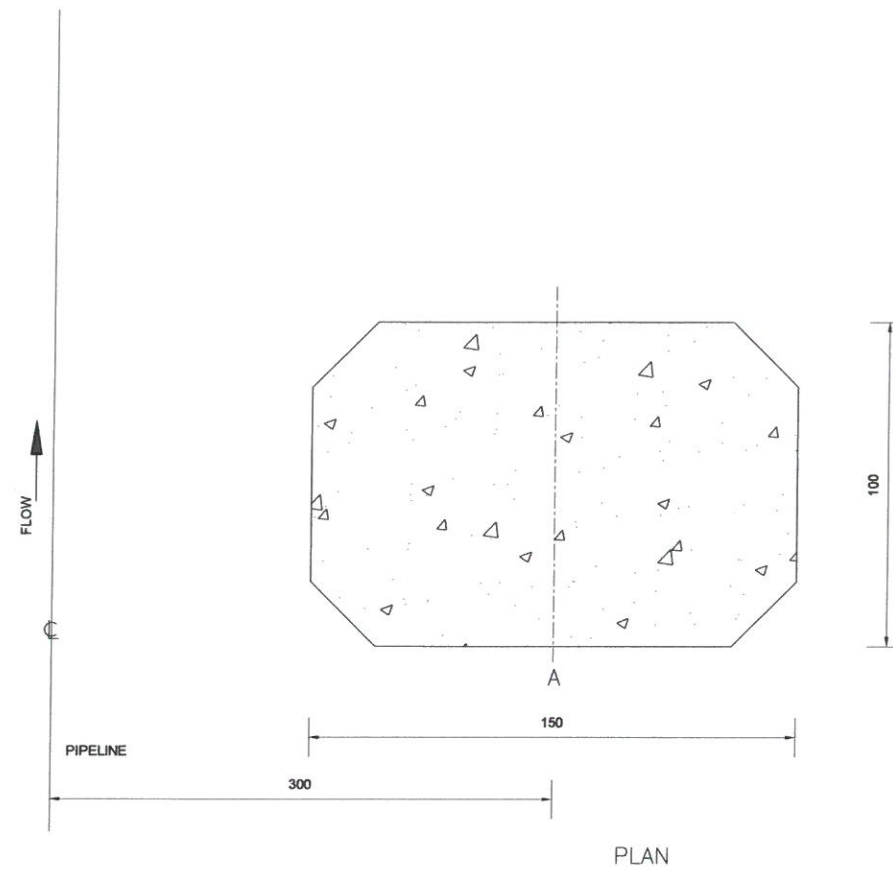
B 06/2021 FOR TENDER No DATE REVISION CONSULT DIR				DESIGNED BY: F.M. CHECKED BY: A.C. DRAWN BY: O.S. CHECKED BY: J.M. APPROVED BY: ALEX CHUSWA SIGNATURE:				CLIENT: J.S. MOROKA LOCAL MUNICIPALITY TEL: (013) 973 1390/1101 PRIVATE BAG 24012 FAX: 013 973 2463 SIYABUSWA 0472				CONSULTANT: 24A BISSIK STREET POLOKwane 9699 TEL: (013) 973 1390/1101 FAX: (013) 973 2463/0974 EMAIL: admin@hwa.co.za				PROJECT NAME: BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION DRAWING TITLE: THRUST BLOCK DETAIL				DRAWING No. 21005-12		SCALE N.T.S	
												REVISION No. B		SHEET No. SHEET 1 OF 1									
												CONTRACT No. TBA											

PIPELINE MARKER NOTES

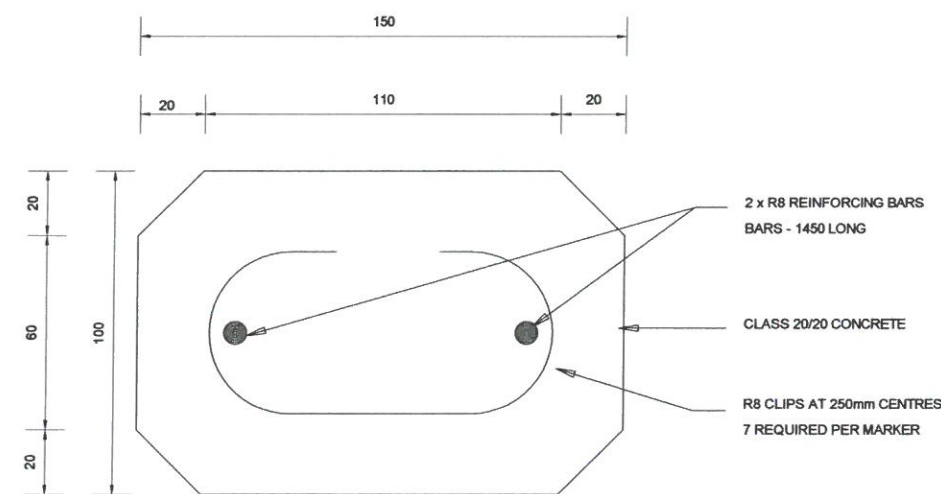
1. MARKER POSTS TO BE PLACED EVERY 500m ALONG THE PIPELINE ROUTE.



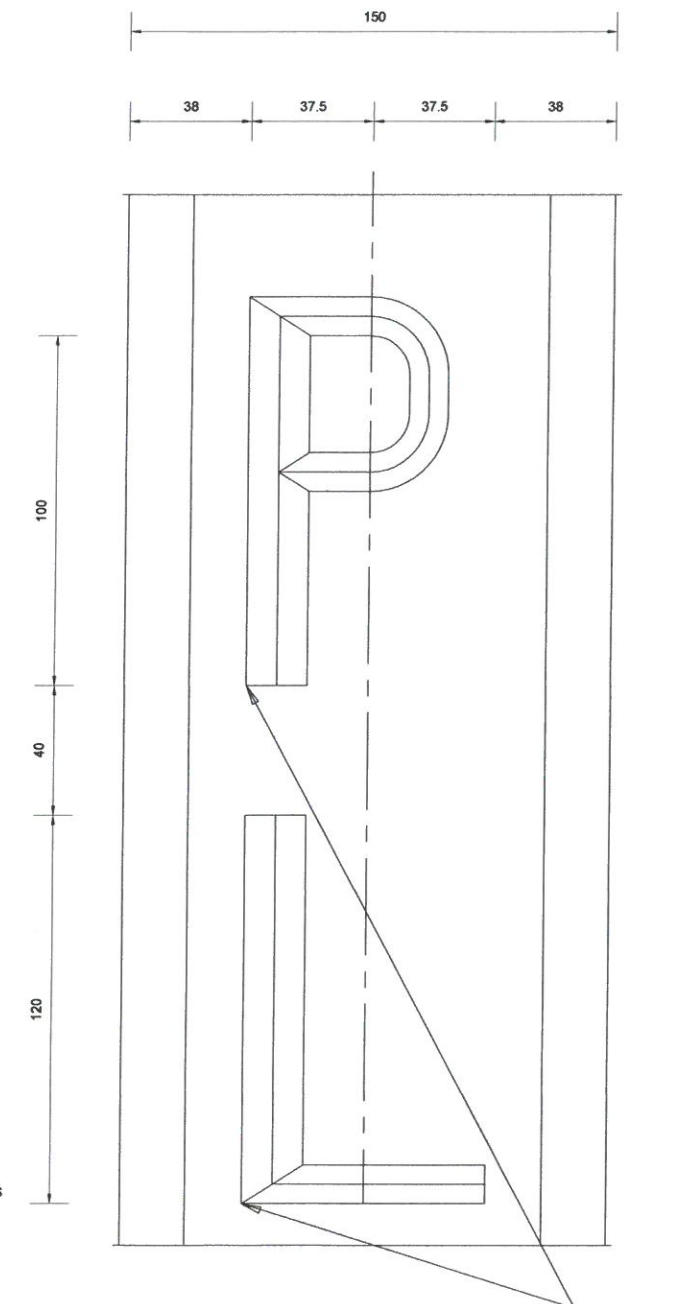
ELEVATION 'A'



PLAN



REINFORCEMENT DETAIL



LETTERING DETAILS

LETTERING FORMED FEMALE IN CONCRETE AND PAINTED WITH BLACK ENAMEL PAINT.
LETTERING TO BE 10mm WIDE x 10mm DEEP.

No	DATE	REVISION	CONSULT	DIR
B	06/2021	FOR TENDER	F.M	

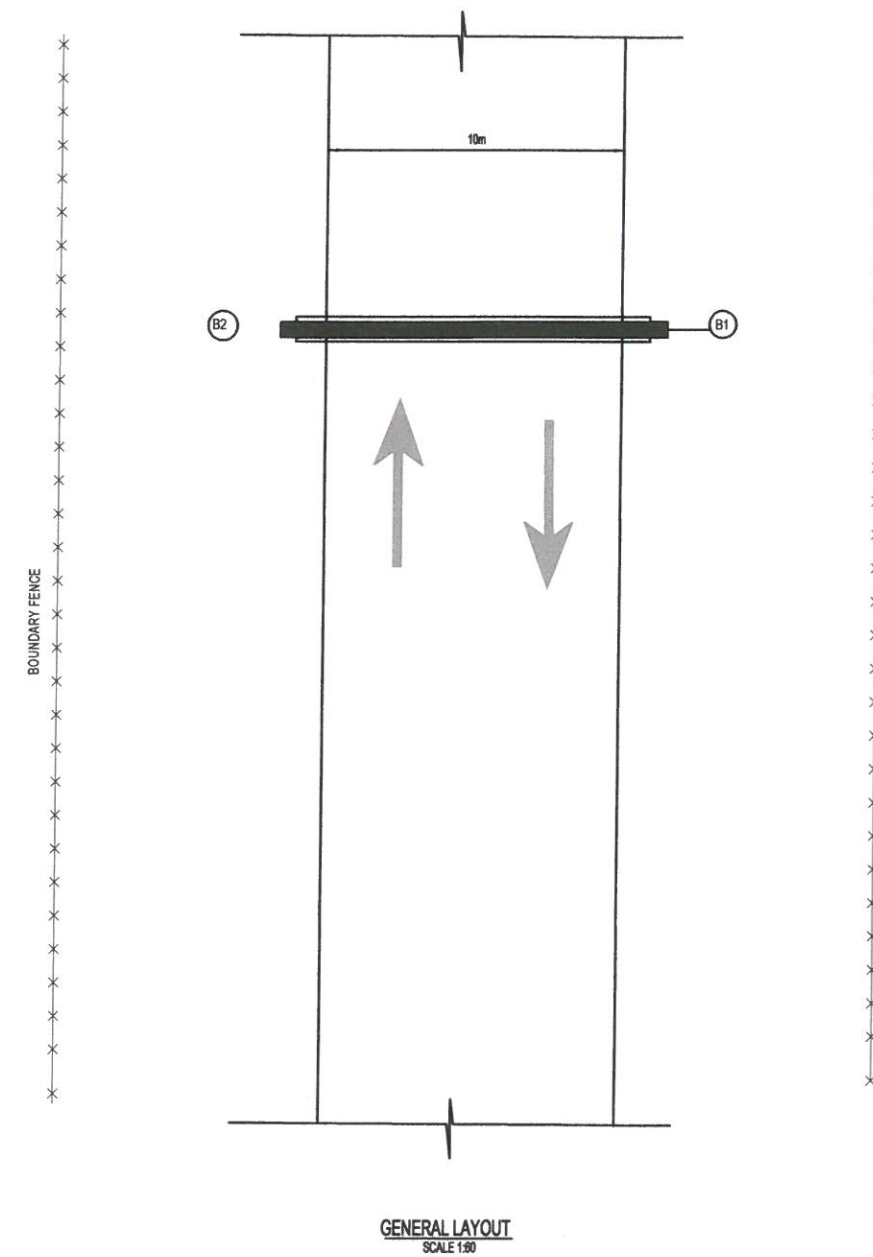
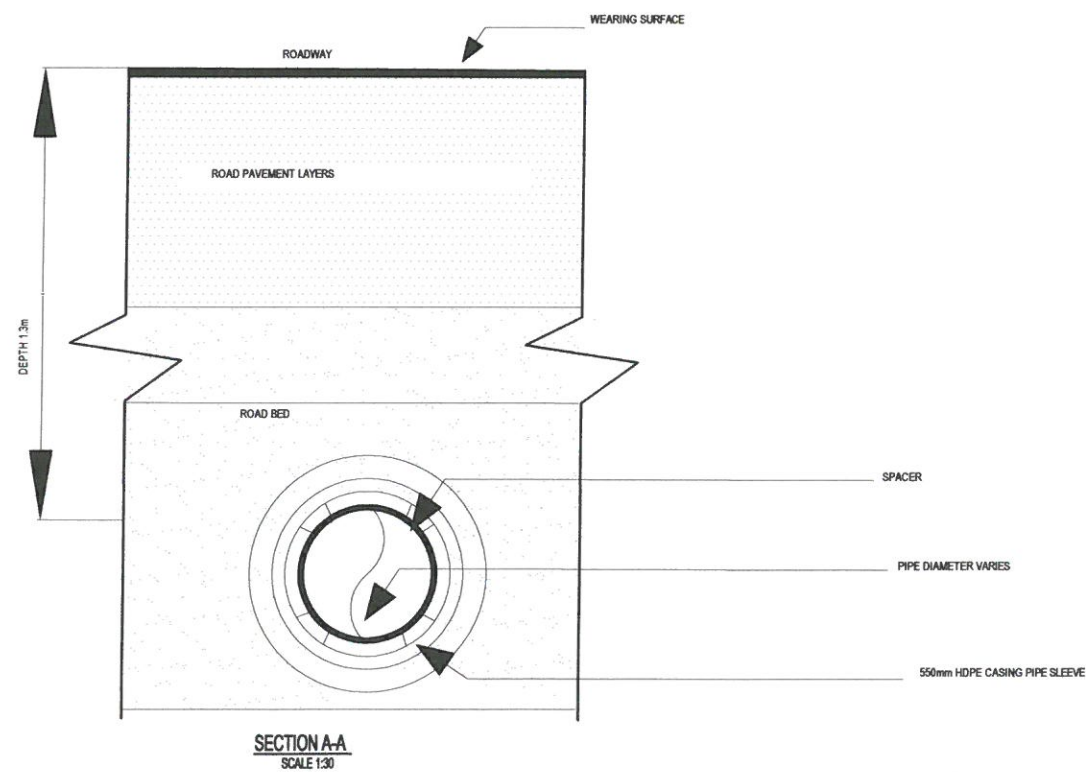
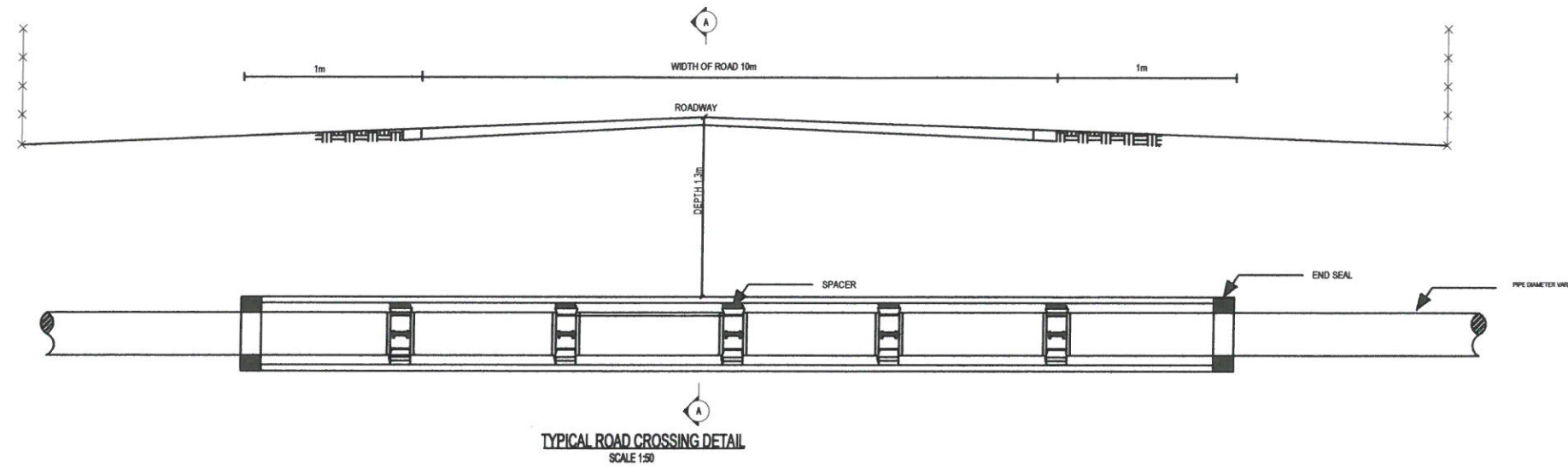
DESIGNED BY	F.M
CHECKED BY	A.C
DRAWN BY	O.S
CHECKED BY	J.M
APPROVED BY	ALEX CHUSWA
SIGNATURE	

CLIENT	DR. J.S. MOKOBA LOCAL MUNICIPALITY PRIVATE BAG X4012 SIYABUSWA 0472
CONSULTANT	24A RISSIK STREET POLOKwane 0699

PROJECT NAME	BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION
DRAWING TITLE	PIPE MARKERS DETAIL

DRAWING No.	21005-13
REVISION No.	B
CONTRACT No.	T.B.A

SCALE	N.T.S
SHEET No.	SHEET 1 OF 1



No	DATE	REVISION	CONSULT	DIR
B	06/2021	FOR TENDER	F.M	

DESIGNED BY	F.M
CHECKED BY	A.C
DRAWN BY	O.S
CHECKED BY	J.M
APPROVED BY	ALEX CHUSWA
CHECKED BY	

CLIENT	BR JS MOROKA LOCAL MUNICIPALITY PRIVATE BAG X4012 SIYABUSWA 5472
CONSULTANT	24A RISSIK STREET POTDORP 5659

PROJECT NAME	BULK PIPELINE MARAPYANE RESERVOIR TO NTWANE SECTION
DRAWING TITLE	ROAD CROSSING GENERAL LAYOUT

DRAWING No.	21005-14
CONTRACT No.	T.B.A

SCALE	AS SHOWN
REVISION No.	B
SHEET No.	1 OF 1