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JOHANNESBURG DEVELOPMENT AGENCY (JDA)

CONSTRUCTION OF SEPTIC TANK, FENCING AND PARKING AT EIKENHOFF FARM AND ELECTRICAL INSTALLATION AND BOREHOLE DRILLING AND EQUIPPING AT NORTHERN FARM

CONTRACT No.: JDA/SOCDEVFARMS/20.7.3.B.8088

<p>ISSUED BY:</p> <p>Johannesburg Development Agency</p> <p>The Bus Factory 3 Helen Joseph (formerly President) Street Newtown 2000</p> <p>Contact Name: Akhona Mnukwa Telephone No: 011 688 7868 Email Address: amnukwa@jda.org.za</p> 	<p>PREPARED BY:</p> <p>JVNC Capital (Pty) Ltd</p> <p>46 Baliza, 1 Nature Road Sharonlea Northriding 2194</p> <p>Contact Name: John Chikarakara Telephone: Email Address: john@jvnc.co.za</p> 
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NAME OF TENDERER:

CIDB REGISTRATION NUMBER:

CSD SUPPLIER NUMBER:.....

COMPANY REGISTRATION NUMBER.....

TAX VERIFICATION PIN

This tender closes at 12h00 on 19TH of May 2021 at the offices of the Johannesburg Development Agency “The Bus Factory”, 3 Helen Joseph (formerly President) Street, Newtown, Johannesburg.

NO LATE SUBMISSIONS WILL BE CONSIDERED

The Johannesburg Development Agency reserves the right to cancel/ not award this tender.

PROCUREMENT DOCUMENT FOR BUILDING CONSTRUCTION

JBCC Edition 6.2 (MAY 2018)

CONSTRUCTION OF EIKENHOFF FARM

CONTRACT No.: JDA/SOCDEVFARMS/20.7.3.B.8088

**PLEASE NOTE: TENDERS MUST BE SUBMITTED ON THE TENDER DOCUMENTATION ISSUED.
TENDER DOCUMENTATION MUST NOT BE REPRODUCED OR REARRANGED. ANY
ADDITIONAL INFORMATION MUST BE SUBMITTED AS A SEPARATE ATTACHMENT TO THE
TENDER DOCUMENT.**

**ALL PAGES OF THE SUBMISSION INCLUDING ATTACHMENTS MUST BE INITIALED AND
NUMBERED.**

RE: The Channels of Reporting Fraudulent and Corrupt Activities

The City of Johannesburg has a **zero-tolerance approach to Fraud, Theft, Corruption, Maladministration, and Collusion** by suppliers with employees. To reinforce this commitment, more channels have been added to report any Fraudulent and Corrupt activities.

Instances of corporate fraud and misconduct remain a constant threat to service delivery. The City of Johannesburg took a resolution to adopt strategic interventions aimed at combatting fraud and corruption. The City took a decision to centralize the reporting of fraudulent and corrupt activities through the establishment of an independent fraud hotline which is managed by independent service providers

All people doing business with the Johannesburg Development Agency are encouraged to report any corrupt or illegal practice.

Employees are encouraged to report fraud, waste or other concerns suggestive of dishonest or illegal activities.

Anyone can report fraudulent and corrupt activities through one of the following channels.

- Toll free number.....0800 002 587
- Toll free Fax.....0800 007 788
- SMS (charged @ R1.50).....32840
- E-Mail address:.....anticorruption@tip-offs.com
- Website:.....www.tip-off.com
- Free post:.....Free Post, KNZ 138, Umhlanga, 4320



LET'S JOIN HANDS TO TAKE UP THE FIGHT AGAINST FRAUD AND CORRUPTION IN OUR SOCIETY.

JOHANNESBURG DEVELOPMENT AGENCY

CONTRACT NO. :
JDA/SOCDEVFARMS/20.7.3.B.8088

EIKENHOFF & NOTHERN FARM

CONTENTS

Number Heading

THE TENDER

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T1.2	Tender Data	(Pink)

Part T2: Returnable Documents

T2.1	List of Returnable Schedules and Documents	(Yellow)
T2.2	Returnable Schedules and Documents	(Yellow)

THE CONTRACT

Part C1: Agreement and Contract Data

C1.1	Form of Offer and Acceptance	(Yellow)
C1.2	Contract Data	(Yellow)
C1.3	Construction Guarantee	(White)
C1.4	Occupational Health and Safety Agreement	(White)
C1.5	Agreement in terms of Section 37 (2) of the Occupational Health and Safety Act No 85 of 1993	(White)

Part C2: Pricing Data

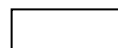
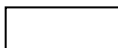
C2.1	Pricing Instructions	(Yellow)
C2.2	Bills of Quantities	(Yellow)

Part C3: Scope of Work

C3	Scope of Work	(Blue)
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Part C4: Site Information

C4	Site Information	(Green)
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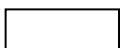
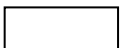


Part C5: Tender Drawings

C5

Drawings

(White)



TENDER DOCUMENT CHECKLIST

Tenderers must complete this document checklist to ensure that all information is completed in the Tender Document.

ITEMS	CHECKED	
	Contractor	Project Manager
1. Correct Tender offer carried forward to the Cover Page and also the Form of Offer and Acceptance in Part C1.1	<input type="checkbox"/>	<input type="checkbox"/>
2. Tenderer's signature on the offer	<input type="checkbox"/>	<input type="checkbox"/>
3. Bill of Quantities	<input type="checkbox"/>	<input type="checkbox"/>
i Bills of Quantities completed in full and in pen	<input type="checkbox"/>	<input type="checkbox"/>
ii Corrections crossed out and initialled	<input type="checkbox"/>	<input type="checkbox"/>
iii Each page initialled	<input type="checkbox"/>	<input type="checkbox"/>
4. Returnable Documents and Schedules	<input type="checkbox"/>	<input type="checkbox"/>
i Authority to Sign Tender	<input type="checkbox"/>	<input type="checkbox"/>
ii Declaration of Interest	<input type="checkbox"/>	<input type="checkbox"/>
iii Record of Addenda to Tender Documents	<input type="checkbox"/>	<input type="checkbox"/>
iv Banking Details	<input type="checkbox"/>	<input type="checkbox"/>
v Proposed Amendments and Qualifications (if any)	<input type="checkbox"/>	<input type="checkbox"/>
vi Certificate of Authority for Joint Venture and Joint Venture Agreement (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>
vii MBD 5: Declaration for Procurement above R10 million	<input type="checkbox"/>	<input type="checkbox"/>
viii MBD 8: Declaration of Bidder's Past Supply Chain Management Practices	<input type="checkbox"/>	<input type="checkbox"/>
ix MBD 9: Certificate of Independent Bid Determination	<input type="checkbox"/>	<input type="checkbox"/>
x Particulars of all Contracts awarded by an Organ of State during the last 5 years	<input type="checkbox"/>	<input type="checkbox"/>
xi Fulfilment of the Construction Regulations Questionnaire on Tenderer's Procedures with respect to OHSA and	<input type="checkbox"/>	<input type="checkbox"/>
xii Construction Regulations	<input type="checkbox"/>	<input type="checkbox"/>
xiii Business Declaration	<input type="checkbox"/>	<input type="checkbox"/>
xiv A copy of a valid Tax Clearance Certificate Tax Pin Number.	<input type="checkbox"/>	<input type="checkbox"/>
xv Copy of current Municipal Account in the name of the Tenderer or alternatively, in the names of the Directors/Partners of the tendering entity	<input type="checkbox"/>	<input type="checkbox"/>
xvi Letter of Intent from a Financial Institution to provide a Construction Guarantee in accordance with the JBCC form (Refer C1.3)	<input type="checkbox"/>	<input type="checkbox"/>
xvii Proof of CIDB Grading required. In the event of a JV a certificate indicating the combined CIDB grading is required.	<input type="checkbox"/>	<input type="checkbox"/>

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xxviii	A valid original or certified copy of the B-BBEE status level verification certificate substantiating the B-BBEE rating or an EME must submit a sworn affidavit	<input type="checkbox"/>	<input type="checkbox"/>
xix	Schedule of Recently Completed Contracts	<input type="checkbox"/>	<input type="checkbox"/>
xx	Project Verification Form	<input type="checkbox"/>	<input type="checkbox"/>
xxi	Schedule of Current Contracts	<input type="checkbox"/>	<input type="checkbox"/>
xxii	Schedule of Construction Plant, Equipment and labour	<input type="checkbox"/>	<input type="checkbox"/>
xxiii	Schedule of Proposed Subcontractors	<input type="checkbox"/>	<input type="checkbox"/>
xxiv	Schedule of Proposed Key Personnel and detailed Curricula Vitae of all Key Personnel	<input type="checkbox"/>	<input type="checkbox"/>
xxv	Estimated Monthly Expenditure	<input type="checkbox"/>	<input type="checkbox"/>
xxvi	Methodology Statement	<input type="checkbox"/>	<input type="checkbox"/>
xxvii	Preliminary Construction Programme	<input type="checkbox"/>	<input type="checkbox"/>
xxviii	Labour, Plant and Equipment Histograms	<input type="checkbox"/>	<input type="checkbox"/>
xxix	Audited Financial Statements for past 3 years	<input type="checkbox"/>	<input type="checkbox"/>
xxx	Bank Rating	<input type="checkbox"/>	<input type="checkbox"/>
xxxii	Local Content	<input type="checkbox"/>	<input type="checkbox"/>

PART T1: TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER

CONTRACT No.: JDA/SOCDEVFARMS/20.7.3.B.8088

CONSTRUCTION WORKS AT EIKENHOFF FARM, JOHANNESBURG SOUTH, AND NORTHERN FARM DIEPSLOOT

The Johannesburg Development Agency invites tenders for the construction of septic tanks, fencing, and parking at **Eikenhoff Farm in Johannesburg South** & Borehole drilling and Equipping and electrical installation at **Northern Farm in Diepsloot**.

It is estimated that the tenderers should have a CIDB contractor grading designation of a minimum **4GB** or higher. Joint ventures are eligible to submit tenders provided that they satisfy the criteria stated in the Tender Data.

Documents may be downloaded from the following websites:

www.jda.org.za

www.etenders.gov.za

Queries relating to the issue of these documents or the project may be addressed to Ms Akhona Mnukwa on e-mail to: AMnukwa@jda.org.za and any procurement related issues may be addressed to Ms Kgadi Mphela on e-mail to: kmphela@jda.org.za.

A compulsory site clarification meeting will take place on sites on the 12th of May 2021 at 10h00 at Northern Farm and at 12h00 at Eikenhoff Farm. Bidders are advised to download the documents and drawings online from 05 May 2021, and submit written queries to AMnukwa@jda.org.za or kmphela@jda.org.za. Questions and answers will also be uploaded on the JDA website. The last day for receipt of queries is 14 May 2021

The closing time for receipt of tenders is 12h00 on the 19 May 2021 Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be accepted.

Tenders must only be submitted on the tender documentation that is issued. The retyping of the tender document is not permitted. Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

The JDA's selection of qualifying tenders will be at the JDA's sole discretion and will be final. The JDA does not bind itself to accept any particular tender. Correspondence will be entered into with the successful tenderer.

"WE ENCOURAGE ALL PEOPLE DOING BUSINESS WITH US TO REPORT ANY CORRUPT OR ILLEGAL PRACTICE, USING THE ANTI-FRAUD HOTLINE NUMBER: 0800 002 587"

PART T1: TENDERING PROCEDURES

T1.2 TENDER DATA

The Conditions of Tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement, (May 2010) as published in Government Gazette No 33239, Board Notice 86 of 2010 of 28 May 2010. (See www.cidb.org.za).

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

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

Clause Number	Clause Heading	Data / Wording
F.1.1	The Employer	Johannesburg Development Agency P. O. BOX 61877 MARSHALLTOWN, 2107
F.1.2	The Tender	<p>PART T1: TENDERING PROCEDURES</p> <p>T1.1 Tender Notice and Invitation to Tender</p> <p>T1.2 Tender Data</p> <p>PART T2: RETURNABLE DOCUMENTS</p> <p>T2.1 List of Returnable Documents</p> <p>T2.2 Returnable Schedules</p>
	The Contract	<p>PART C1: AGREEMENTS AND CONTRACT DATA</p> <p>C1.1 Form of Offer and Acceptance</p> <p>C1.2 Contract Data</p> <p>C1.3 Construction Guarantee</p> <p>C1.4 Occupational Health and Safety Agreement</p> <p>PART C2: PRICING DATA</p> <p>C2.1 Pricing Instructions</p> <p>C2.2 Bill of Quantities</p> <p>PART C3: SCOPE OF WORK</p> <p>PART C4: SITE INFORMATION</p>

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Clause Number	Clause Heading	Data / Wording
F.1.4	Project Manager	Name: Pace Project Management Address: 354 Rivonia Boulevard, Rivonia, 2128 Tel: 010 020 2217 Fax: E-mail: info@pace.co.za
F.2.1	Eligibility	<p>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, are eligible to have their tenders evaluated.</p> <p>In addition, only those tenderers who have in their employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.</p> <p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> 1. every member of the joint venture is registered with the CIDB; 2. the lead partner has a contractor grading designation in the 4GB General Building 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 an 4GB class of construction work determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.
F.2.7	Clarification Meeting	<p>A compulsory site clarification meeting will be on sites on the 12th of May 2021 at 10h00 at Northern Farm and at 12h00 at Eikenhoff Farm. Bidders are advised to download the documents and drawings online, and submit written queries to AMnukwa@jda.org.za or kmphele@jda.org.za. Questions and answers will also be uploaded on the JDA website. The last day for receipt of queries is 14 May 2021</p>
F.2.12	Alternative tender offers	No alternative tender offers will be considered.
F.2.13.2		All returnable documents to the employer as defined in F.1.2 of the Tender Data shall be returned in legible writing in non-erasable ink.
F.2.13.3	Number of copies of tender offers to be submitted to the Employer	Parts of each tender offer communicated on paper shall be submitted as an original, plus one (1) copy.

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Clause Number	Clause Heading	Data / Wording
F.2.13.5 F.2.15.1	Sealing and Delivery of tender offers	<p>The Employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are:</p> <p>Location of tender box: Reception Desk of the Johannesburg Development Agency</p> <p>Physical address: The Bus Factory 3 Helen Joseph St (formerly President St) NEWTOWN JOHANNESBURG</p> <p>Identification details: <i>Tender reference</i> JDA/SOCDEVFARMS/20.7.3.B.8088</p> <p>CONSTRUCTION OF SEPTIC TANK, FENCING AND PARKING AT EIKENHOFF FARM. BOREHOLE DRILLING AND EQUIPPING AND ELECTRICAL INSTALLATION AT NORTHERN FARM</p>
F.2.13.9	Telephonic	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
F.2.15	Closing time of tender offers	The closing time for submission of tender offers is 12h00 on 19 May 2021
F.2.16.1	Tender offer validity	The tender offer validity period is 120 days.
F.2.16.3		<p>Add the following:</p> <p>“Should a tenderer amend or withdraw his or her tender after the closing date and time, but prior to him or her being notified of the acceptance thereof, or should a tenderer after having been notified that his or her tender has been accepted –</p> <ol style="list-style-type: none"> 1. give notice of his or her inability to execute the Contract in accordance with his or her tender; or 2. fail to sign a contract within the period stipulated in the tender requirements or any extended period determined by the employer; or 3. fail to execute the Contract. <p>he or she shall pay all additional expenses which the employer has to incur in inviting new tenders and pay the difference between his or her tender and any less favourable tender accepted, as well as any consequential loss which may arise as a result of his/her non-fulfilment of his/her obligations: Provided that the employer may exempt a tenderer from the provisions of this sub-regulation if he is of the opinion that such non-performance is justifiable.</p> <p>When during the above-mentioned circumstances it is not deemed expedient to invite new tenders, the employer may entertain a recommendation for acceptance of a tender from those already received.”</p>
F.2.17		Add the following:

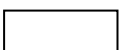
JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause Number	Clause Heading	Data / Wording
	Clarification of tender after submission	"The tenderer is to provide clarification with regards to a request for clarification from the employer, within 48 hours of the employer making the request, failing which, the tender offer will be considered non-responsive."
F.2.18		The tenderer 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.2.20	Letter of Intent	The tenderer is required to submit with his tender a letter of intent from an approved financial institution undertaking to provide the Construction Guarantee in the format included in Part C1.3 of this procurement document.
F.2.23	Certificates	<p>The tenderer is required to submit with his tender:</p> <ul style="list-style-type: none"> a) A copy of a valid Tax Pin Number. b) An original and valid certified B-BBEE status level verification certificate or a certified copy thereof, substantiating the bidding entity's B-BBEE rating. Only certificates issued by verification agencies accredited by the South African Accreditation System (SANAS), or by registered auditors approved by the Independent Regulatory Board of Auditors (IRBA) will be accepted. The copy must bear an original stamp. Failure to submit as required will result in the bidder scoring zero (0) points for B-BBEE. c) Copies of legal registration documents of company /close corporations/partnership, including certified copies of Identity Documents. d) Joint Venture Agreement and Power of Attorney for Joint Ventures with the Targeted Enterprise. e) Workmen's Compensation Registration Certificate (or proof of payment of contributions in terms of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993) f) Documents and Schedules listed in Part T2.
F.3.4	Opening of tender submissions	Tenders will be opened immediately after the closing time at 12h00 on 19 May 2021
F.3.11.3	Evaluation of Tender Offers	<p>The procedure for the evaluation of responsive tenders is Method 2 (Price and Preferences) having completed a technical evaluation.</p> <p>The Preference Point System assigns a score to each tenderer based on the tender price and on the tenderer's B-BBEE status. These scores are combined to determine an overall score for the tender. The tenderer with the highest score will be considered for acceptance.</p>

Clause Number	Clause Heading	Data / Wording																															
		<p>The Preference Point System will be applied as follows.</p> <p>For tenders below <u>R50 million</u></p> <ul style="list-style-type: none"> • 80 points are assigned to price • Up to 20 points are assigned to B-BBEE status <p>The total points for Price and Preference in each case above must add up to 100 points.</p>																															
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #e0e0e0;">Variable</th> <th style="background-color: #e0e0e0;">Criteria</th> <th style="background-color: #e0e0e0;">Description of criteria</th> <th style="background-color: #e0e0e0;">Points</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e0e0e0;">(A1) Method Statement</td> <td> Detailed Method Statement concentrating on the following: <ol style="list-style-type: none"> 1. Project Specific 2. How will the works be programmed 3. What safety measures will be implemented during the construction period 4. Specific way of managing a live environment with high pedestrian activity </td> <td>Points will be allocated as per the criteria</td> <td style="text-align: center;">50</td> </tr> <tr> <td rowspan="3" style="background-color: #e0e0e0;">(B1) Company Experience and Track record on major building works projects above R 5 million .</td> <td>Five (5) or more Projects competed</td> <td rowspan="3">Major building works projects with values more than R5 million completed in the past five years</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Three (3) – Four (4) Projects completed</td> <td style="text-align: center;">50</td> </tr> <tr> <td>One (1) – Two (2) Project completed</td> <td style="text-align: center;">25</td> </tr> <tr> <td style="background-color: #e0e0e0;">Variables</td> <td style="background-color: #e0e0e0;">Criteria</td> <td style="background-color: #e0e0e0;">Description of criteria</td> <td style="background-color: #e0e0e0;"></td> </tr> <tr> <td rowspan="3" style="background-color: #e0e0e0;">(C) Relevant Contactable reference (in client letter head) (PC Certificate will not be accepted)</td> <td>Five (5) satisfactory reference</td> <td rowspan="3">Reference from previous clients of the projects listed in B1 above, completed in the past five years</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Three (3) – Four (4) satisfactory references</td> <td style="text-align: center;">50</td> </tr> <tr> <td>One (1) – Two (2) satisfactory reference</td> <td style="text-align: center;">25</td> </tr> </tbody> </table>				Variable	Criteria	Description of criteria	Points	(A1) Method Statement	Detailed Method Statement concentrating on the following: <ol style="list-style-type: none"> 1. Project Specific 2. How will the works be programmed 3. What safety measures will be implemented during the construction period 4. Specific way of managing a live environment with high pedestrian activity 	Points will be allocated as per the criteria	50	(B1) Company Experience and Track record on major building works projects above R 5 million .	Five (5) or more Projects competed	Major building works projects with values more than R5 million completed in the past five years	100	Three (3) – Four (4) Projects completed	50	One (1) – Two (2) Project completed	25	Variables	Criteria	Description of criteria		(C) Relevant Contactable reference (in client letter head) (PC Certificate will not be accepted)	Five (5) satisfactory reference	Reference from previous clients of the projects listed in B1 above, completed in the past five years	100	Three (3) – Four (4) satisfactory references	50	One (1) – Two (2) satisfactory reference	25
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JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause Number	Clause Heading	Data / Wording			
		Variables	Criteria	Description of criteria	Points
		(D) Experience of proposed key personnel. (Copies of qualifications are required for Contracts Manager, Site Agent, Site Engineer and OHS officer)	Contracts Manager: a minimum of a National Diploma and 5 years' experience as Contracts Manager in major building works projects and registered as a Professional Construction Manager (Pr CM/CPM) with the SACPCMP	Experience required on building projects of the proposed key person.	50
	Site Agent: Site Agent with minimum 3 years of experience as a Site Agent on major building works projects with minimum qualification of a National Diploma		20		
	General Foreman: General Foreman with minimum 8 years of experience as a General Foreman in building projects		20		
			OHS officer: 5 years' experience as construction health and safety officer and has experience in major building works projects. Registered with SACPCMP as Construction Health and Safety Agent or equivalent, or proof of application of registration.		20
		<p>Tenders will be required to achieve a minimum score of 196 (70%) in the technical evaluation out of a possible 280 points in the technical evaluation in order to be considered further in the evaluation process.</p>			
		<p>FORMULA FOR SCORING TENDER PRICE</p>			



Clause Number	Clause Heading	Data / Wording																					
		<p>The following formula will be used to calculate the points for price.</p> $P_s = X \left[1 - \frac{(P_t - P_{min})}{P_{min}} \right]$ <p>Where</p> <p>P_s = Points scored for comparative price of tender under consideration P_t = Comparative price of tender under consideration P_{min} = Comparative price of lowest acceptable tender</p> <p>X = Points assigned to price</p> <p>POINTS AWARDED FOR B-BBEE STATUS LEVEL</p> <p>The points allocated to a tenderer will be in accordance with the Preferential Procurement Regulations, 2017 published in Government Gazette No. 40553 dated 20 January 2017.</p> <p>The following table is applicable.</p> <table border="1"> <thead> <tr> <th rowspan="2">B-BBEE Status Level Of Contributor</th> <th>Number of Points</th> </tr> <tr> <th>Tenders below R50 million</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>20</td> </tr> <tr> <td>2</td> <td>18</td> </tr> <tr> <td>3</td> <td>16</td> </tr> <tr> <td>4</td> <td>12</td> </tr> <tr> <td>5</td> <td>8</td> </tr> <tr> <td>6</td> <td>6</td> </tr> <tr> <td>7</td> <td>4</td> </tr> <tr> <td>8</td> <td>2</td> </tr> <tr> <td>Non-Compliant contributor</td> <td>0</td> </tr> </tbody> </table> <p>Notes :</p> <ol style="list-style-type: none"> 1. "B-BBEE status level of contributor" means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard 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). 2. Tenderers must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating. Certificates issued by either verification agencies accredited by the South African Accreditation System (SANAS) or by registered auditors approved by the Independent Regulatory Board for Auditors (IRBA) are acceptable. THE COPY MUST BEAR A CERTIFICATION. FAILURE TO SUBMIT AS REQUIRED WILL RESULT IN THE BIDDER SCORING ZERO (0) POINTS FOR BBEE. 3. An EME must submit a sworn affidavit confirming the following: <ul style="list-style-type: none"> • Annual Turnover Revenue of R10 million or less; and • Level of Black ownership • Any misrepresentation in terms of the above constitutes a criminal offence as set out in the B-BBEE Act as amended. 	B-BBEE Status Level Of Contributor	Number of Points	Tenders below R50 million	1	20	2	18	3	16	4	12	5	8	6	6	7	4	8	2	Non-Compliant contributor	0
B-BBEE Status Level Of Contributor	Number of Points																						
	Tenders below R50 million																						
1	20																						
2	18																						
3	16																						
4	12																						
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6	6																						
7	4																						
8	2																						
Non-Compliant contributor	0																						

Clause Number	Clause Heading	Data / Wording
		<p>4. The submission of such certificates must comply with the requirements of instructions and guidelines issued by the National Treasury and be in accordance with notices published by the Department of Trade and Industry in the Government Gazette.</p> <p>5. A trust, consortium or joint venture will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.</p> <p>6. A trust, consortium or 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.</p> <p>7. A person will not be awarded points for B-BBEE status level if it is indicated in the tender documents that such a tenderer intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a tenderer qualifies for.</p> <p>8. A person awarded a contract will not be permitted to sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned.</p> <p>TOTAL PREFERENCE POINTS</p> <p>The total preference points for a tender are calculated with the formula</p> <p>PP = P_s + P_{bee} where PP is the total number of preference points scored by the tenderer P_s is the points scored for the comparative price of the tenderer, and P_{bee} is the number of points awarded to the tenderer based on his certified B-BBEE status level</p> <p>RISK TOLERANCE FRAMEWORK</p> <p>The JDA has adopted a Risk Tolerance Framework (RTF) which enjoins the JDA to consider its risk exposure to contractors/Service Providers in terms of the number of contracts awarded to a single Contractor/service provider or the total value of contracts awarded to a single contractor/service provider in a particular year.</p> <p>In terms of the Risk Tolerance Framework, the JDA determine the risk exposure as excessive in instances where the value of the contracts are:</p> <ol style="list-style-type: none"> 1) The greater of R80 million or four contracts/ projects in the current financial year or 2) The greater of R 120 million or six contracts/projects over two financial years (current year and previous financial year). <p>A risk analysis shall be undertaken on the bidder with the highest number of points obtained, to determine whether the tenderer does not exceed the JDA's risk framework criteria as stated above, in other words whether it falls within the ambit of the Risk Tolerance Framework as acceptable.</p>

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause Number	Clause Heading	Data / Wording
		<p>JDA reserves the right to award a contract to a bidder who has exceeded the threshold as stated above.</p> <p>Shortlisted bidders may be requested to attend interviews should there be any need for clarity.</p> <p>Unsuccessful bidders will have the opportunity to query the award or decision within 14 days from the day of notification.</p> <p>Bidders are to note that JDA does not bind itself to accept the lowest priced bid.</p>
	<p>Disqualification Criteria</p>	<p>BIDDERS WILL BE DISQUALIFIED FOR:</p> <ul style="list-style-type: none"> • Failure to complete and sign the Offer page; • Failure to complete and submit a Priced Bill of Quantities in full; • Failure to take into account any addendums issued during tender stage; • Termination during the last five (5) years on previous contracts with the JDA or any other organ of state after written notice was given to that bidder; • Completing the tender document in pencil. • Failure to submit all returnable schedules and documents listed on T2.1 and T2.2. • Failure to be registered and active with CIDB on the relevant grading. • Failure to attend the compulsory site briefing session.
<p>F.3.13</p>	<p>Acceptance of Tender Offers</p>	<p>Tender offers will only be accepted if:</p> <ol style="list-style-type: none"> a) The tenderer submits a letter of intent from an approved financial institution undertaking to provide the Construction Guarantee in the format included in Part C1.3 of this procurement document; b) The tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation; c) The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; d) The tenderer has not: <ol style="list-style-type: none"> i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect; e) The tenderer has completed the Declaration of Interest and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process. f) The tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer; g) The employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2014, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely. h) The tendering entity or the directors/partners of the tendering entity are in good standing with the local authority / municipality.

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Clause Number	Clause Heading	Data / Wording
F.3.18	Number of Paper Copies	The number of paper copies of the signed contract to be provided by the employer is 1 (one).

T2.1 LIST OF RETURNABLE DOCUMENTS

T2.1.1 Returnable Documents and Schedules required for tender evaluation purposes

The tenderer must complete the following returnable schedules

- Form A1:** Authority to sign Tender
- Form A2:** Declaration of Interest
- Form A3:** Record of Addenda to Tender Documents
- Form A4:** Banking Details
- Form A5:** Proposed Amendments and Qualifications (if any)
- Form A6:** Certificate of Authority for Targeted Enterprise Partners/Subcontractors
- Form A7:** MBD9 Certificate of Independent Bid Determination
- Form A8:** Particulars of any contracts awarded by an organ of state during the last 5 years

- Form A9:** Fulfilment of the Construction Regulations
- Form A10:** Questionnaire on tenderer's procedures with respect to OHSA and Construction Regulations

- Form A11:** Business Declaration
- Form A12:** A copy of a valid Tax Pin Number
- Form A13:** Copy of current Municipal Account in the name of the Tenderer or alternatively in the names of the Directors/Partners of the tendering entity

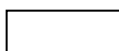
- Form A14:** Letter of Intent from a Financial Institution to provide a Construction Guarantee in accordance with the JBCC pro-forma (refer C1.3)
- Form A15:** MBD5 Declaration for Procurement above R10 million (Vat Included)
- Form A16:** MBD8 Declaration of Bidders Past Supply Chain Management Practices
- Form A17:** Declaration of State of Municipal Accounts

- Form B1:** Proof of CIDB Grading
- Form B2:** A valid originally or certified copy of the B-BBEE status level verification certificate, substantiating the B-BBEE rating or an EME must submit a sworn affidavit

- Form B3:** Schedule of Recently Completed Contracts
- Form B4:** Schedule of Current Contracts
- Form B5:** Schedule of Construction Plant, Equipment and Labour
- Form B6:** Schedule of Proposed Subcontractors
- Form B7:** Schedule of Proposed Key Personnel and detailed CV's of all key personnel

- Form B8:** Estimated Monthly Expenditure
- Form B9:** Methodology Statement
- Form B10:** Preliminary Construction Programme
- Form B11:** Labour, Plant and Equipment Histograms
- Form B12:** Audited Financial Statements for past three (3) years
- Form B13:** Bank Rating
- Form B14:** Bills of Quantities
- Form B15:** Local Content

T2.1.2 Other Documents that will be incorporated into the contract



- Form of Offer and Acceptance
- Contract Data
- Priced Bill of Quantities
- Occupational Health and Safety Agreement (C1.4)
- Agreement in terms of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993 (C1.5)
- Approved Construction Programme

T2.2 RETURNABLE SCHEDULES AND DOCUMENTS

T2.2.1 Returnable Schedules and Documents

- Form A1:** Authority to sign Tender
- Form A2:** Declaration of Interest
- Form A3:** Record of Addenda to Tender Documents
- Form A4:** Banking Details
- Form A5:** Proposed Amendments and Qualifications (if any)
- Form A6:** Certificate of Authority for Targeted Enterprise Partners/Subcontractors
- Form A7:** MBD9 Certificate of Independent Bid Determination
- Form A8:** Particulars of any contracts awarded by an organ of state during the last 5 years
- Form A9:** Fulfilment of the Construction Regulations
- Form A10:** Questionnaire on tenderer's procedures with respect to OHSA and Construction Regulations
- Form A11:** Business Declaration
- Form A12:** A copy of a valid Tax Pin Number.
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- Form A16:** MBD8 Declaration of Bidders Past Supply Chain Management Practices
- Form A17:** Declaration of State of Municipal Accounts

- Form B1:** Proof of CIDB Grading
- Form B2:** A valid originally certified copy of the B-BBEE status level verification certificate, substantiating the B-BBEE rating or an EME must submit a sworn affidavit
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- Form B4:** Schedule of Current Contracts
- Form B5:** Schedule of Construction Plant, Equipment and Labour
- Form B6:** Schedule of Proposed Subcontractors
- Form B7:** Schedule of Proposed Key Personnel and detailed CV's of all key personnel
- Form B8:** Estimated Monthly Expenditure
- Form B9:** Methodology Statement
- Form B10:** Preliminary Construction Programme
- Form B11:** Labour, Plant and Equipment Histograms
- Form B12:** Audited Financial Statements for past three (3) years
- Form B13:** Bank Rating
- Form B14:** Bills of Quantities
- Form B15:** Local Content

FORM A1: Authority to Sign Tender

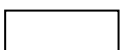
Notes to tenderer:

1. The signatory for the tenderer shall confirm his/her authority thereto by attaching on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors/partners.
2. In the event that the tenderer is a joint venture, a certificate is required from each member of the joint venture clearly setting out:
 - authority for signatory,
 - undertaking to formally enter into a joint venture contract should an award be made to the joint venture,
 - name of designated lead member of the intended joint venture, as required by tender condition F.2.13.4.

.....
SIGNATURE

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

.....
DATE



FORM A2: Declaration of Interest

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.
3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.
 - 3.1 Full Name of bidder or his or her representative:
 - 3.2 Identity Number:
 - 3.3 Position occupied in the Company (director, trustee, shareholder):
.....
 - 3.4 Company Registration Number:
 - 3.5 Tax Reference Number:.....
 - 3.6 VAT Registration Number:
 - 3.7 The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.
 - 3.8 Are you presently in the service of the state? **YES / NO**
If yes, furnish particulars.....
.....
 - 3.9 Have you been in the service of the state for the past twelve months? **YES / NO**
If yes, furnish particulars.....
.....
 - 3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**
If yes, furnish particulars.....
.....
 - 3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**
If yes, furnish particulars.....
.....

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

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

If yes, furnish particulars.....

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

If yes, furnish particulars.....

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

If yes, furnish particulars.....

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

FULL NAME	IDENTITY NUMBER	STATE EMPLOYEE NUMBER

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT. I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
 Signature

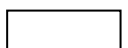
.....
 Position

.....
 Name of Bidder

.....
 Date

- * 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.

** "Stakeholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.



FORM A3: Record of Addenda to Tender Documents

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

	DATE	TITLE OR DETAILS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

.....
Signature
(of person authorised to sign on behalf of the Tenderer)

.....
Date

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM A4: Banking Details

I/We hereby authorise the Employer to approach the following bank for the purposes of obtaining a financial reference:

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO TENDERER'S HEAD OFFICE
Name of Bank	
Branch Name	
Branch Code	
Street Address	
Postal Address	
Name of Manager	
Telephone Number	
Fax Number	
Account Number	

.....
SIGNATURE

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

.....
DATE

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

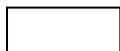
FORM A6: Certificate of Authority for Targeted Enterprise Partners/Subcontractors

We, the undersigned, are submitting this tender offer jointly with the following Targeted Enterprise Partners/Subcontractors and hereby authorise Mr/Ms , authorised signatory of the company , acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	PERCENTAGE PARTICIPATION	ADDRESS	DULY AUTHORISED SIGNATORY
Lead Partner			Signature:
			Name:
			Designation:
CIDB registration no:			
Partner			Signature:
			Name:
			Designation:
CIDB registration no:			
Partner			Signature:
			Name:
			Designation:
CIDB registration no:			

.....
SIGNATURE
(of person authorised to sign on behalf of the Tenderer)

.....
DATE



JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM A7: Certificate of Independent Bid Determination

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

JOHANNESBURG DEVELOPMENT AGENCY

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

I certify, on behalf of: _____ that:
(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or

- (f) bidding with the intention not to win the bid.
- 8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM A8 (Continued)

EMPLOYER	CONSULTING ENGINEER	NATURE OF WORK	VALUE OF WORK	YEAR OF COMPLETION

.....
SIGNATURE

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

.....
DATE

Organ of State means-

- a) a national or provincial department;
- b) a municipality;
- c) a constitutional institution defined in the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- d) Parliament;
- e) a provincial legislature;
- f) any other institution or category of institutions included in the definition of "organ of state" in section 239 of the Constitution and recognised by the [Minister](#) by notice in the *Government Gazette* as an institution or category of institutions to which [this Act](#) applies;

FORM A9: Fulfilment of the Construction Regulations, 2014

In terms of regulation 4(3) of the Construction Regulations, 2014 (hereinafter referred to as the Regulations), promulgated on 7 February 2014 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) the Employer shall not appoint a contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

1. I confirm that I am fully conversant with the Regulations and that my company has (or will acquire/procure) the necessary competencies and resources to timeously, safely and successfully comply with all of the requirements of the Regulations.

(Tick)

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

2. Proposed approach to achieve compliance with the Regulations

(Tick)

Own resources, competent in terms of the Regulations (refer to 3 below)	<input type="checkbox"/>
Own resources, still to be hired and/or trained (until competency is achieved)	<input type="checkbox"/>
Specialist subcontract resources (competent) - specify:	<input type="checkbox"/>

3. Provide details of proposed key persons, competent in terms of the Regulations, who will form part of the Contract team as specified in the Regulations (CVs to be attached):

.....

4. Provide details of proposed training (if any) that will be undergone:

.....

5. Potential key risks identified and measures for addressing risks:

.....

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

6. I have fully included in my tendered rates and prices (in the appropriate payment items provided in the Schedule of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects repair period.

(Tick)

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

.....
SIGNATURE

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

.....
DATE

FORM A10: Questionnaire on Tenderer's Procedures with respect to the Occupational Health and Safety Act (OHACT) and Construction Regulations.

1. Name of the employee to be appointed as Construction Manager [Construction Regulation 8 (1)]
.....
2. Name of the employee to be appointed as Construction Supervisor [Construction Regulation 8 (7)]
.....
3. Names of the competent employees to assist the Construction Supervisor [Construction Regulation 8 (8)]
.....
.....
4. Name of the person to be appointed to conduct base line and ongoing risk assessments [Construction Regulation 9 (1)]
.....
5. Name of competent person to be appointed as occupational health and safety officer [Construction Regulation 8 (6)]
.....
6. Will the employees to be appointed on the project be in possession of proof of health and safety induction training that will address the project specific risks and exposures [Construction Regulation 9 (1) (a)]? Yes / No.
If no, what are the tenderer's proposals for such training?
7. Are the tenderer's tools, plant and equipment tested and inspected regularly i.e. daily for vehicles and equipment and at least weekly for other tools and hand tools in terms of safety compliance? Yes/No
If no, what are the tenderer's proposals for such testing?
8. Will a dedicated supervisor be designated to manage the process to test and inspect all tools, plant and equipment? Yes/No
If no, what are the tenderer's proposals for such designation?
.....
.....

9. What other measures will the tenderer take to comply with the OHSACT and the Construction Regulations?.....Yes/No

If no, what are the tenderer's proposals to comply with this requirement?

.....
.....

9. Is the tenderer registered and in good standing with the Compensation Commissioner or duly approved compensation insurer?.....Yes/No

.....
SIGNATURE

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

.....
DATE

FORM A11: Business Declaration

Tender/RFP Number :
Tender/RFP Description :
Name of Company :
Postal Address :
.....
Physical Address :
.....
Telephone :
Fax :
Contact Person :
Cell Phone Number :
E-Mail Address :
Company/enterprise Income
Tax Reference Number ** :
(Insert personal income tax number if a one-person business and personal income tax numbers of all partners if a partnership)
VAT Registration Number :
Company Registration Number:

1. Type of Firm
- Partnership
 - One-person business/sole trader
 - Close corporation
 - Public company
 - Private company

(Tick One Box)

2. Principal Business Activities
.....
.....

3. Total number of years the firm has been in business:

4. Detail all trade associations/professional bodies in which you have membership.
.....
.....

5. Did the firm exist under a previous name?

- Yes
- No

(Tick one box)

If yes, what was its previous name.....

6. How many permanent staff members are employed by the firm?

Full Time:

Part Time:

7. What is the enterprise's latest annual turnover (excl. VAT): R.....

8. List the personnel or firms who provide the following services:

SERVICE	NAME	CONTACT PERSON	TELEPHONE
ACCOUNTING			
LEGAL			
AUDITING			
BANKING			
INSURANCE			

BANK DETAILS

I/We hereby request and authorize you to pay any amounts which may accrue to me/us to the credit of my/our account with the mentioned bank.

I/We understand that the credit transfers hereby authorized will be processed by computer through a system known as the "ACB Electronic Fund Transfer Service" and

I/We also understand that no additional advice of payment will be provided by my/our bank, but details of each payment will be printed on my/our bank statement or any accompanying voucher.

This authority may be cancelled by me/us giving 30 days' notice in writing.

BANK:

BRANCH:

BRANCH CODE:

ACCOUNT NUMBER:

ACCOUNT HOLDER:

TYPE OF ACCOUNT:

PLEASE INCLUDE ORIGINAL SIGNED AND STAMPED LETTER FROM THE BANK CONFIRMING THE COMPANY'S BANKING DETAILS, PHOTOSTAT COPIES AND LETTERS BEARING ELECTRONIC SIGNATURES WILL NOT BE ACCEPTABLE.

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the company, affirms that the information furnished in response to this request for proposal is true and correct:

SIGNATURE :

NAME IN FULL :

CAPACITY :

DULY AUTHORIZED TO SIGN ON BEHALF OF:

DATE :

FORM A12: A copy of a valid Tax Pin Number.

The tenderer shall include as an attachment to their submission a copy of a valid Tax Pin Number which shall be obtained by the tenderer from the South African Revenue Service (SARS).

In the event of a joint venture each member shall comply with the above requirement.

.....
SIGNATURE

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

.....
DATE

FORM A13: Municipal Accounts

The tenderer shall include as an attachment to their submission a copy of the current Municipal Account in the name of the Tenderer or alternatively in the names of the Directors/Partners of the tendering entity.

In the event of a joint venture each member shall comply with the above requirement.

.....
SIGNATURE

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

.....
DATE

FORM A14: Letter of Intent

The tenderer shall include as an attachment to their submission a Letter of Intent from a Financial Institution to provide a Construction Guarantee in accordance with the JBCC pro-forma (refer C1.3).

.....
SIGNATURE
(of person authorised to sign on behalf of the Tenderer)

.....
DATE

FORM A15: Declaration for Procurement above R10 million (MBD 5)

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 statements for auditing?

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

.....

YES / NO

.....

2 Do you have any outstanding undisputed commitments for municipal services towards 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 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 the 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

.....
.....

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

FORM A16: Declaration of Bidder’s Past Supply Chain Management Practices (MBD 8)

DECLARATION OF BIDDER’S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality’s / municipal entity’s supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury’s database as a company or person prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? (To access this Register enter the National Treasury’s website, www.treasury.gov.za, click on the icon “Register for Tender Defaulters” or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		

Item	Question	Yes	No
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

CERTIFICATION

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM A17: DECLARATION ON STATE OF MUNICIPAL ACCOUNTS

A Any bid will be rejected if:
Any municipal rates and taxes or municipal service charges owed by the bidder or any of the directors to the municipality or a municipal entity, or to any other municipality or municipal entity, are in arrears for more than three months.

B Bid Information

i. Name of bidder:

.....

ii. Registration Number:

.....

iii. Municipality where business is situated

.....

iv. Municipal account number for rates:

.....

v. Municipal account number for water and electricity:

.....

vi. Names of all directors, their ID numbers and municipal account number.

1.

.....

2.

.....

3.

.....

4.

.....

5.

.....

6.

.....

7.

.....

C Documents to be attached.

- i. A copy of municipal account mentioned in B (iv) & (v) (Not older than 3 months)
- ii. A copy of municipal accounts of all directors mentioned in B(vi) (Not older than 3 months)
- iii. Proof of directors

I/We declare that the abovementioned information is true and correct and that the following documents are attached to this form:

Signature

Date

FORM B1: CIDB Grading

The tenderer shall include as an attachment to their submission the proof of CIDB grading.

In the event of a joint venture each member shall comply with the above requirement.

.....
SIGNATURE

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

.....
DATE

FORM B2: B-BBEE Certificate

The tenderer shall include as an attachment to their submission a valid originally certified copy of the B-BBEE status level verification certificate, substantiating the B-BBEE rating. An EME must submit a sworn affidavit confirming the following:

- Annual Turnover Revenue of R10 million or less; and
- Level of Black ownership
- Any misrepresentation in terms of the above constitutes a criminal offence as set out in the B-BBEE Act as amended.

A trust, consortium or joint venture will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

A trust, consortium or 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.

.....
SIGNATURE
(of person authorised to sign on behalf of the Tenderer)

.....
DATE

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM B3: Schedule of Recently Completed Contracts

The Tenderer shall list below five building construction contracts of a **similar nature** completed by the Tenderer in the past five years. Similar nature refers to building projects, with a minimum value of R5m. This form is to be completed and submitted together with reference letters from the employer on their letterhead for each of the projects listed.

This information is material to the award of the Contract.

(In the event of insufficient space, attach supplementary documentation)

EMPLOYER (Name, Tel No and Fax No)	PRINCIPAL AGENT (Name, Tel No and Fax No)	NATURE OF WORK	VALUE OF WORK	YEAR OF COMPLETION

.....
Signature
(of person authorised to sign on behalf of the Tenderer)

.....
Date

JDA JBCC

FORM B4: Schedule of Current Contracts

The Tenderer shall list below the contracts not yet completed. This information is material to the award of the Contract.

(In the event of insufficient space, attach supplementary documentation)

EMPLOYER (Name, Tel No and Fax No)	LOCATION	NATURE OF WORK	VALUE OF WORK	EXPECTED DATE OF COMPLETION

.....
Signature
(of person authorised to sign on behalf of the Tenderer)

.....
Date

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM B5: Schedule of Construction Plant & Equipment

The following are lists of Construction Plant and Equipment that I/We presently own or lease and will have available for this contract if my / our tender is accepted.

- (a) **Details of Equipment that is owned by me / us and immediately available for this contract.**

DESCRIPTION	QUANTITY	YEAR ACQUIRED

Attach additional information in a supplementary document

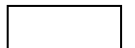
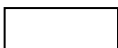
- (b) **Details of Plant & Equipment that will be hired, or acquired for this contract if my / our tender is accepted**

DESCRIPTION <i>(type, size, capacity etc.)</i>	QUANTITY	HOW ACQUIRED	
		HIRE/ BUY	SOURCE

Attach additional information in a supplementary document

.....
Signature
(of person authorised to sign on behalf of the Tenderer)

.....
Date



JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM B6: Schedule of Proposed Sub-Contractors

I/We hereby notify you that it is my/our intention to employ the following Sub-Contractors for work in this contract. Tenderers are to provide details of their subcontractors for the following trades: **All Trades**.

NAMES AND ADDRESSES OF PROPOSED SUBCONTRACTORS	NATURE AND EXTENT OF WORK TO BE SUBCONTRACTED	PREVIOUS EXPERIENCE WITH SUBCONTRACTOR OR RECENT WORK EXECUTED BY THE SUB-CONTRACTOR

.....
Signature

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

.....
Date

JDA JBCC

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

FORM B7: Proposed Key Personnel

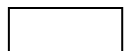
The Tenderer shall list below the key personnel whom he proposes to employ on the contract should his offer be accepted, both at his headquarters and on the site, together with their qualifications, experience and positions held.

LOCATION	DESIGNATION	NAME AND NATIONALITY OF PROPOSED CANDIDATE	SUMMARY OF QUALIFICATIONS & EXPERIENCE
HEAD OFFICE	Contracts manager		
SITE OFFICE	Site Agent		
	Site Engineer		
	General Foreman		
	Health and Safety Officer		
	SMME Supervisor		

NOTE: Detailed Curriculum Vitae of proposed candidates are to be separately provided. Said CV's MUST indicate qualifications (proof of which is to be attached), number of years' experience, and the nature and value of projects completed including the role performed on said projects.

.....
Signature
(of person authorised to sign on behalf of the Tenderer)

.....
Date



FORM B8: Estimated Monthly Expenditure

The Tenderer shall state below the estimated value of work to be completed every month based on his preliminary programme and his tendered unit rates.

*** The amounts for contingencies must not be included.**

MONTH	VALUE *
1	R.....
2	R.....
3	R.....
4	R.....
5	R.....
6	R.....
7	R.....
8	R.....
9	R.....
10	R.....
11	R.....
12	R.....
13	R.....
14	R.....
15	R.....
	COMPLETION OF CONTRACT
TOTAL	R.....

.....

SIGNATURE
(of person authorised to sign on behalf of the Tenderer)

DATE

FORM B9: Methodology Statement

The tenderer shall include as an attachment to their submission the detailed Methodology Statement for the works.

The methodology must demonstrate how the contractor intends to sequence the works. The manner in which the contractor intends to allocate resources must be clearly spelt out. When assessing the methodology, congruency with the project schedule will also be examined.

.....
.....

SIGNATURE

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

DATE

FORM B10: Preliminary Construction Programme

The tenderer shall include as an attachment to their submission the preliminary Construction Programme for the works.

.....
.....

SIGNATURE

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

DATE

FORM B11: Labour, Plant and Equipment Histograms

The tenderer shall include as an attachment to their submission the labour, plant and equipment histograms for the works.

.....
.....

SIGNATURE

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

DATE

FORM B12: Financial Statements

The tenderer shall include as an attachment to their submission the Audited Financial Statements for the past three years.

.....
.....

SIGNATURE

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

DATE

FORM B13: Bank Rating

The tenderer shall include as an attachment to their submission a letter from the bank at which he declares he conducts his account. The contents of the bank's letter must state the credit rating that it accords to the tenderer for the business envisaged by this tender.

In the event of a joint venture each member shall comply with the above requirement.

.....
.....

SIGNATURE

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

DATE

FORM B14: Bills of Quantities (Refer C2.2)

The BoQ pages in white (see C2.2), must be completed in full, completed in pen, corrections are to be crossed out and initialled, and each page initialled.

FORM B15: Declaration Certificate for Local Production and Content for Designated Sectors (MBD 6.2)

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

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

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2011 (Regulation 9) makes provision for the promotion of local production and content.
- 1.2. Regulation 9.(1) prescribes that in the case of designated sectors, where in the award of bids local production and content is of critical importance, such bids must be advertised with the specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 2011 as follows:

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

Where

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

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

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

2. Definitions

- 2.1. **“bid”** includes written price quotations, advertised competitive bids or proposals;
- 2.2. **“bid price”** price offered by the bidder, excluding value added tax (VAT);
- 2.3. **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.4. **“designated sector”** means a sector, sub-sector or industry that has been designated by the Department of Trade and Industry in line with national development and industrial policies for local production, where only locally produced services, works or goods or locally manufactured goods meet the stipulated minimum threshold for local production and content;
- 2.5. **“duly sign”** means a Declaration Certificate for Local Content that has been signed by the Chief Financial Officer or other legally responsible person nominated in writing by the Chief Executive, or senior member / person with management responsibility(close corporation, partnership or individual).
- 2.6. **“imported content”** means that portion of the bid price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or its subcontractors) and which costs are inclusive of the costs abroad (this includes labour and intellectual property costs), plus freight and other direct importation costs, such as landing costs, dock duties, import duty, sales duty or other similar tax or duty at the South African port of entry;
- 2.7. **“local content”** means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;
- 2.8. **“stipulated minimum threshold”** means that portion of local production and content as determined by the Department of Trade and Industry; and
- 2.9. **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract.

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

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
Steel Products and Component for Construction	
Steel Value-added Products	_100%
Steel Power Pylons, Monopole Pylons,	
Steel Substation Structures, Power line Hardware,	_100%
Street light steel poles,	
Plastic Pipes	100%
Electrical Cables	_100%
Valves Products	_100%
DC Combiner Boxes	_65%
Mounting Structure	_90%
Inverter	40%

Prepaid Electricity Meters	_100%
Pastic Pipes	100%
Bulk Material Handling	85%
Structural Steel	100%

Pumps, Medium Voltage (MV) Motor and Associated Accessories 70%

4. Does any portion of the services, works or goods offered have any imported content?

(Tick applicable box)

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

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

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

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

<u>Currency</u>	<u>Rates of exchange</u>
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

5. Were the Local Content Declaration Templates (Annex C, D and E) audited and certified as correct?

(Tick applicable box)

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

5.1. If yes, provide the following particulars:

- (a) Full name of auditor:
- (b) Practice number:
- (c) Telephone and cell number:
- (d) Email address:

(Documentary proof regarding the declaration will, when required, be submitted to the satisfaction of the Accounting Officer / Accounting Authority)

6. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the dti must be informed accordingly in order for the

dti to verify and in consultation with the Accounting Officer / Accounting Authority provide directives in this regard.

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

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

IN RESPECT OF BID NO

ISSUED BY: (Procurement Authority / Name of Municipality / Municipal Entity):
.....

NB

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

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

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

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

(b) I have satisfied myself that

- (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
- (ii) the declaration templates have been audited and certified to be correct.

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

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

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

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

(e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SATS 1286:2011, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Preferential Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE: _____

WITNESS No. 1 _____

WITNESS No. 2 _____

PART C1: AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract In respect of the following works:

CONSTRUCTION OF SEPTIC TANK, FENCING AND PARKING AT EIKENHOFF FARM AND BOREHOLE DRILLING AND EQUIPPING AND ELECTRICAL INSTALLATION AT NOTHERN FARM – CONTRACT NO.: JDA/SOCDEVFARMS/20.7.3.B.8088

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

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

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

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

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the Tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the Tenderer becomes the party named as the Contractor in the conditions of contract identified in the Contract Data.

TENDERER:

WITNESS:

Signature

Signature

Name

Name

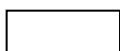
Capacity

Capacity

Date

Date

Name and address of organisation:



Acceptance

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

The terms of the contract, are contained in:

- Part 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 the above listed Parts 1 to 4 above.

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

The Tenderer shall within two weeks of 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 securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (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.

EMPLOYER:

WITNESS:

Signature

Signature

Name

Name

Capacity

Capacity

Date

Date

Name and address of organisation:

JOHANNESBURG DEVELOPMENT AGENCY (PTY) LTD
NO. 3 PRESIDENT STREET (HELEN JOSEPH STREET)
NEWTOWN
JOHANNESBURG

JDA JBCC

Schedule of Deviations

Notes:

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

1 Subject

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JOHANNESBURG DEVELOPMENT AGENCY (JDA)

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this agreement.

TENDERER:

EMPLOYER:

Signature

Signature

Name

Name

Capacity

Capacity

Name and address of organisation:

Name and address of organisation:

WITNESS:

WITNESS:

Signature

Signature

Name

Name

Date

Date

Confirmation of Receipt

The Tenderer, (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the _____ (day) of _____ (month) _____ (year)

at _____ (place)

CONTRACTOR:

WITNESS:

Signature

Signature

Name

Name

Capacity

Capacity

Date

Date

C1.2 CONTRACT DATA

PART 1: Data Provided by the Employer

The Conditions of Contract are the *JBCC Principal Building Agreement (May 2018, Edition 6.2)*, published by the Joint Building Contracts Committee. Copies of these documents may be obtained from the Association of South African Quantity Surveyors (011-3154140), the Master Builders Association (011-205-9000) the South African Association of Consulting Engineers (011-4632022) or the South African Institute of Architects (011-4860684).

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

Clause	Data
1.1 [4.2]	<p>The Employer is : JOHANNESBURG DEVELOPMENT AGENCY</p> <p>Address (physical) : The Bus Factory, 3 Helen Joseph Street (formerly President Street) Newtown, Johannesburg</p> <p>Address (postal) : PO Box 61877, Marshalltown, 2107</p> <p>Telephone : 011 688 7800</p> <p>Facsimile: : 011 688 7863</p> <p>VAT registration number : 444019718</p>
1.2 [6.1]	<p>The Principal Agent is : Pace Project Management</p> <p>Address (postal) : 1st Floor, Progress House, Lillipark Office Park, 354 Rivonia Boulevard Rivonia, 2128</p> <p>Telephone : 010 020 2217</p> <p>Facsimile : :</p> <p>e-mail : info@pace.co.za</p>
1.3 [6.2]	<p>The Agent (1) is : Architect</p> <p>Name : N/A</p> <p>Address (postal) : :</p> <p>Telephone : :</p> <p>Facsimile : :</p> <p>e-mail : :</p>
1.4 [6.2]	<p>The Agent (2) is : Quantity Surveyor</p> <p>Name : JVNC Capital</p> <p>Address (postal) : 46 Baliza, 1 Nature Road, Sharonlea, 2194</p> <p>Telephone : 078 742 6324</p> <p>Facsimile : :</p> <p>e-mail : john@jvnc.co.za</p>

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause	Data
1.5 <i>[6.2]</i>	The Agent (3) is : Civil & Structural Engineer Name : Kgosihadi Consulting Engineers Address (postal) : 05 Lynx Street, Treesbank AH, Midrand , 1683 Telephone : 015 023 0082 Facsimile : e-mail : admin@kgosihadi.co.za
1.6 <i>[6.2]</i>	The Agent (4) is : Electrical & Mechanical Engineers Name : MMT Consulting Engineers Address (postal) : Block 6A, Unit 63, Northgate Office Park, Cnr. Aureole & Profit Str., Northgate Telephone : 011 540 0121 Facsimile : 011 317 3601 e-mail : lloyd@mmtce.co.za
1.7 <i>[6.2]</i>	The Agent (5) is : Community Participation Consultant Name : Ikamva Consulting Address (postal) : Telephone : 012 663 5310 Facsimile : e-mail : lisolomzi@kamva.co.za
1.8 <i>[6.2]</i>	The Agent (6) is : Occupational Health & Safety Consultants Name : Thero Services Address (postal) : Greenstone Hill Office Park, Building 5, Upper Floor, South Africa 1609 Telephone : 010 021 0132 Facsimile : e-mail : olga@theroserv.co.za
1.10	The Principal Agent named in 1.2 above is responsible for the preparation of the contract data schedule and must be contacted should the tenderer be uncertain of the information provided or to be provided. Failure to complete the contract data schedule in full may result in the tender being disqualified
2.1 <i>[1.7]</i>	The law applicable to this agreement : South Africa
2.1 <i>[1.1]</i>	The works comprise: The construction of septic tank, fencing, and parking at Eikenhoff Farm. Borehole drilling and equipping and electrical installation at Northern Farm.
2.3 <i>[1.1]</i>	The site is situated in: Nothern Farm (Latitude:25.951004°S, Longitude: 27.996722°E) Diepsloot Eikenhoff Farm (Latitude: 26°20'14.78"S, Longitude: 28° 0'39.89"E) Johannesburg South along Klipriver road

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause	Data												
2.4 [12.1.5]	Possession of the site : <p style="text-align: right;">Approximately 14 days post tender closing</p>												
2.5 [12.2.7]	The period for the commencement of the works after the contractor takes possession of the site is 5 working days, provided that all guarantees, insurances, construction permits, etc. are in place as no extension of time will be granted to the Contractor in failing to provide these documents timeously.												
2.6 [20.1]	Completion of the works in sections is required: <p style="text-align: right;">No</p>												
2.7 [25.14.2]	Waiver of the contractor's lien or right on continuing possession is required: <p style="text-align: right;">Yes</p>												
2.8 [B 7.0]	Defined restrictions to the site area: <p style="text-align: center;">The contractor is to adhere to strict working times of 7am – 5pm daily.</p>												
2.9 [B 16.0]	Geotechnical investigation of the site has been undertaken: <p style="text-align: right;">No Geotechnical Investigation required for the works</p>												
2.10 [B 7.0]	Existing premises will be occupied: <p style="text-align: right;">Yes, but works are all external</p>												
2.11 [B 16.0]	Provision of temporary services is required: <p style="text-align: right;">YES (As described below)</p>												
	<table border="1" style="width: 100%;"> <thead> <tr> <th>Service</th> <th></th> </tr> </thead> <tbody> <tr> <td>Water</td> <td style="text-align: center;">A</td> </tr> <tr> <td>Electricity</td> <td style="text-align: center;">A</td> </tr> <tr> <td>Telecom</td> <td style="text-align: center;">A</td> </tr> <tr> <td>Ablutions</td> <td style="text-align: center;">A</td> </tr> <tr> <td colspan="2">Note: Option A = Contractor at his cost; Option B = Employer free of charge; Option C = Employer metered (contractor cost)</td> </tr> </tbody> </table>	Service		Water	A	Electricity	A	Telecom	A	Ablutions	A	Note: Option A = Contractor at his cost; Option B = Employer free of charge; Option C = Employer metered (contractor cost)	
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2.12 [B 16.0]	Protection of existing trees and shrubs is required: <p style="text-align: right;">Yes - to be identified on site</p>												
3.1 [10.1.1]	Contract works insurance is to be effected by the: <p style="text-align: right;"> <ul style="list-style-type: none"> • Contractor • For an amount of Contract Sum + 20% </p>												
3.2 [10.1.2]	Supplementary insurance: is to be effected by the: <p style="text-align: right;"> <ul style="list-style-type: none"> • Contractor • For an amount of Contract Sum + 20% </p>												

JOHANNESBURG DEVELOPMENT AGENCY (JDA)

Clause	Data
3.3 <i>[10.1.3]</i>	Public liability insurance is to be effected by the <ul style="list-style-type: none"> • Contractor • For the sum of R10 million
3.4 <i>[11.1.1]</i>	Support insurance: N/A
3.5 <i>[11.1.2-3, 12.1]</i>	Special insurance: N/A
4.0 <i>[19.1.2 24.1-3]</i>	For the works as a whole: The date for practical completion is 3 months after possession of the site The penalty per calendar day is R4000
5.1 <i>[5.6]</i>	Construction documents copies to be supplied to the contractor free of charge: Three copies of the drawings
5.2 <i>[5.4]</i>	The priced document may be used as a specification of materials and goods and work methods: No
5.3 <i>[3.10]</i>	The contractor shall provide a schedule of rates: No (The completed Bills of Quantities must be supplied)
5.4 <i>[3.11]</i>	Changes made to JBCC standard document: Yes - refer to the additions, deletions and alterations to the JBCC Principal Building Agreement as listed under Clause 6.0 below.
5.5 <i>[15.1.1]</i>	On acceptance of the tender the priced document is to be submitted within: Not Applicable - Fully priced BOQ to be submitted with tender
5.6 <i>[B 10.0]</i>	Work to be undertaken by direct contractors : None anticipated at present, but the Employer has the right to employ direct contractors at a later date.

Clause	Data
<p>5.7 [19.3.3]</p>	<p>On achievement of practical completion, the contractor is to hand over:</p> <p style="text-align: right;">All required manuals etc. related to the works which must include but not limited to: Electrical, Electronic, HVAC, Plumbing & Drainage, Waterproofing, Groundwater Laboratory Test Certificate, Borehole Water Pumps Manual, Geological/Lithological and Hydraulic Information Records for Borehole Drilling process, etc.</p>
<p>5.8 [25.1]</p>	<p>The interim payment certificate:</p> <p style="text-align: right;">25th of every month</p>
<p>[25.3.4]</p>	<p>The contract value shall not be adjusted according to CPAP and shall be a fixed priced contract</p>
<p>6.0</p>	<p>CHANGES MADE TO THE STANDARD JBCC DOCUMENT ARE:</p>
	<p>The JBCC Principal Building Agreement makes several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the JBCC Principal Building Agreement.</p> <p>Each item of data given below is cross-referenced to the clause in the JBCC Principal Building Agreement to which it mainly applies.</p> <p>The additions, deletions and alterations to the JBCC Principal Agreement are:</p>
<p>1.0</p>	<p>DEFINITIONS AND INTERPRETATION</p> <p>Clause 1.1 is deemed to be amended by the addition and amendments of the following:</p> <p>Change the Definition of "AGREEMENT" to read as follows: AGREEMENT means the agreement arising from the signing of the Form of Offer and Acceptance by the parties.</p> <p>Change the Definition of "CONSTRUCTION PERIOD" to read as follows: The period commencing on the date of site hand over and ending on the date of practical completion.</p> <p>Change the Definition of "CONTRACT DOCUMENTS" to read as follows: The agreement and all documents referenced therein. The contract documents shall be taken to be mutually explanatory of one another but in the event of ambiguity, discrepancy, divergence or inconsistency in or between them, the JBCC Principal Building Agreement as amended in the contract data shall prevail over all other contract documents.</p> <p>Change the Definition of "CONTRACT SUM" to read as follows: The total of prices in the Form of Offer and Acceptance.</p>

Clause	Data
	<p>EXCEPTIONALLY INCLEMENT WEATHER means weather which is not only extreme or severe but exceeding that which, on the evidence of the past ten years, could reasonably be expected.</p>
<p>5.0</p>	<p>DOCUMENTS</p> <p>Clause 5.2 is amended by deleting the following:</p> <p style="padding-left: 40px;">"Formal signatures are not required to render this agreement binding"</p>
<p>6.0</p>	<p>EMPLOYER’S AGENTS</p> <p>Clause 6.5 is deleted and replaced with the following:</p> <p>6.5 “Should the principal agent or any agent be unable to act or cease to be an agent, the employer shall inform the contractor of the new principal agent or agent appointed.</p>
<p>7.0</p>	<p>DESIGN RESPONSIBILITY</p> <p>Clause 7.0 is amended by the addition of the following clauses to the end thereof:</p> <p>7.4 Notwithstanding the provisions of clause 7.2, the contractor is to ensure that nominated, selected or domestic subcontractors shall simultaneously with the signing of the relevant nominated, selected or domestic sub-contract sign and deliver to the employer a design materials and workmanship warranty and undertaking in favour of the employer.</p> <p>7.5 Any subcontractor whose subcontract involves design work will be required to provide to the employer evidence of "professional indemnity" insurance for such design work.</p> <p>If the contractor fails to obtain the necessary design warranties and / or indemnities from the subcontractors, the design responsibility shall be deemed to devolve upon the contractor"</p>
<p>6.0</p>	<p>CONTRACTOR’S SITE REPRESENTATIVE</p> <p>Clause 6.0 is amended by the addition of the following clauses to the end thereof:</p> <p>-</p> <p>6.3 — The contractor shall submit a full organogram of the site personnel with the names of the management team which will be allocated to the project for the construction of the works.</p>

Clause	Data
	<p>6.4 — Where the key personnel are no longer accessible to undertake the necessary work after the award of the tender, the contractor shall within a period of 5 working days replace the key personnel with a person with equivalent competencies and subject to approval by the principal agent.</p> <p>6.5 — The contractor's representative shall not be a person against whom the principal agent shall make a reasonable objection.</p>
	<p>6.6 — On instruction from the principal agent the contractor's representative shall be replaced by a person approved by the principal agent.</p> <p>6.7 — The contractor shall not make any changes to the management and site personnel relative to the project without prior approval of the principal agent.</p>
<p>7.0 7.0</p>	<p>COMPLIANCE WITH LAWS AND REGULATIONS</p> <p>Clause 7.0 is amended by the addition of the following clause to the end thereof:</p> <p>-</p> <p>7.2 — The employer reserves the right to pay (i.e. whether direct or through the contractor) for all or any permanent connections to local or other authority services for which provisional amounts have been included within these bills of quantities or within any selected sub-contract documents. In the event of the employer paying for these charges, the contractor will not be entitled to the applicable and agreed mark-up in terms of clause 32.4. All such provisional amounts included in the contract sum will be omitted.</p>
<p>9.0</p>	<p>INDEMNITIES</p> <p>Clause 9.1 is amended by the addition of the following clause to the end thereof:</p> <p>9.1.4 The contractor indemnifies and holds harmless the employer against all liability, losses, claims, damages, penalties, actions, proceedings or judgments (collectively referred to as “Losses”) arising from any infringement of letters, patent design, trademark, name, copyright or other protected rights in respect of any machine, plant, work, materials, thing, system or method of using, fixing, working or arrangement used or fixed or supplied by the contractor, but such indemnity shall not cover any use of the equipment of part thereof otherwise than in accordance with the provisions of the specification. All payments and royalties payable in one sum or by instalments or otherwise shall be included by the contractor in the price and shall be paid by him to those to whom they may be payable. The contractor shall reimburse the employer for all legal and other costs and expenses, including without limitation attorney’s fees on attorney-client scale incurred by the employer in connection with investigation, defending or settling any Losses in connection with pending or threatening litigation in which the employer is a party.</p>

Clause	Data
	Clause 9.2.7 is deleted.
12.0	<p>EFFECTING INSURANCES Delete Clause 12.6</p>
11.0	<p>SECURITY</p> <p>Clause 11.1 is deleted and replaced with the following clause:</p> <p>11.1 The contractor shall provide the security as stated in the contract data. Such security shall be provided to the employer within twenty-one (21) calendar days of acceptance of the contractor's tender.</p> <p>Clause 11.1.2 is deleted and replaced with the following clauses:</p> <p>11.1.2 The employer has selected the security in terms of clause 11.0, which is a fixed construction guarantee and payment reduction. This guarantee is to be issued by the contractor:</p> <p>11.1.2.1 The contractor shall furnish the employer with a fixed construction guarantee equal in value to ten per cent (10%) of the contract sum within fourteen (14) calendar days from the offer of appointment date</p> <p>11.1.2.2 The fixed construction guarantee shall come into force, be administered and expire in terms of the construction guarantee form included under Part C1 Agreement and Contract Data, Clause C1.3 Construction Guarantee.</p> <p>11.1.2.3 The employer shall return the fixed construction guarantee to the contractor within fourteen (14) calendar days of its expiring.</p> <p>11.1.2.4 The payment reduction to the value certified in a payment certificate shall be made [31.8, 34.8].</p> <p>11.1.2.5 Where the employer has a right of recovery against the contractor [33.0], the employer may issue a written demand in terms of the fixed construction guarantee or may recover from the payment reduction [33.4] or both.</p> <p>Clause 14.6 is deleted and replaced with the following clause:</p> <p>14.6 Payment made by the guarantor to the employer in terms of a construction guarantee shall not prejudice the rights of the employer or contractor.</p>
15.0	<p>PREPARATION FOR AND EXECUTION OF THE WORKS</p> <p>Clause 15.1 is amended by the addition of the following to the end thereof:</p>

Clause	Data
	<p>15.1.3 An acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), within fourteen (14) calendar days of date of acceptance of the tender.</p> <p>Clause 15.2 is amended by deleting 15.2.1 and replacing with the following clause:</p> <p>15.2.1 Give the contractor possession of the site within ten (10) working days of the contractor complying with the terms of 15.1.</p> <p>Clause 15.2.2 is deleted.</p> <p>Clause 15.2.3 is deleted.</p> <p>Clause 15.5 is amended by the addition of the following clauses to the end thereof:</p> <p>15.5.1 The contractor shall furnish samples of materials and specimens of finishes as may be called for by the principal agent for his approval.</p> <p>15.5.2 The principal agent may instruct the contractor to furnish samples of workmanship for his approval. Where the principal agent requires an assembly of various elements of the building or installation which is not incorporated in the works, the contractor shall arrange such an assembly at the employer's expense and the contract value shall be adjusted accordingly.</p>
<p>16.0</p>	<p>SITE AND ACCESS</p> <p>Clause 16.7 is amended by the addition of the following:</p> <p>The contractor shall be deemed to have familiarised himself with all known services, servitudes, etc. Any queries relating to information regarding all known existing services, servitudes, etc. should be directed to the principal agent.</p> <p>The contractor shall be held responsible for damage to existing services caused or arising out of the contractor's operations. Wherever a service is damaged it shall be replaced at the expense of the contractor.</p>
<p>13.0</p>	<p>SETTING OUT</p> <p>Cause 13.0 is amended by the addition of the following clauses at the end thereof</p> <p>13.2 The contractor shall continuously perform tolerance control checks throughout the contract period and report on these at regular intervals to the principal agent in a format approved by the principal agent.</p> <p>Should the contractor fail to comply with this requirement to the satisfaction of the principal agent, progressively as the structure is constructed, the employer shall be entitled to commission a registered land surveyor to do so on the contractor's behalf and at the contractor's expense.</p>

Clause	Data
	<p>13.3 The contractor shall provide general attendance and all reasonable assistance to the abovementioned or any other land surveyor who may be appointed by the employer.</p>
<p>19.0</p>	<p>TEMPORARY WORKS AND PLANT</p> <p>Clause 19.0 is amended by the addition of the following clauses:</p> <p>19.3 ...including but not limited to fencing off the site</p> <p>19.4 The contractor shall provide air conditioned office accommodation for meetings suitable for 20 persons. The office accommodation is to be kept clean and fit for use at all times by the contractor.</p> <p>— In addition the contractor shall provide air conditioned office accommodation for the resident engineer. The resident engineer's office will be fitted out with a desk, chair, filing cabinet, waste paper bin and internet connectivity. The resident engineer's office will be kept clean and fit for use at all times.</p> <p>19.5 The contractor shall provide 1No main notice board of an approved design with the title of the project and the names of the employer, the principal agent, the agents and the contractor sign written thereon. The principal agent shall instruct the contractor where the boards are to be erected".</p>
<p>19.0</p>	<p>PRACTICAL COMPLETION</p> <p>Clause 24.0 is amended by replacing the word list with lists.</p> <p>Clause 19.0 is amended by the addition of the following clauses to the end thereof:</p> <p>19.8 Without derogating from the generality of the requirements for practical completion the following specific requirements shall apply:</p> <p>19.8.1 Defects occurring after the issue of the practical completion list requiring remedial work that will in the opinion of the principal agent cause disruption will cause the issue of the certificate of practical completion to be withheld until such defects have been rectified to the satisfaction of the principal agent.</p> <p>19.8.2 The following certificates of compliance shall be required (excluding others that may be required by the local / national authority) from the contractor to achieve practical completion:</p> <ul style="list-style-type: none"> a) A certificate from the contractor that all aspects of the construction regulations of 2014 have been complied with. b) A certificate from the contractor that the National Building Regulations have been complied with c) A certificate of compliance with respect to plumbing and drainage d) An electrical certificate of compliance

Clause	Data
	<p>e) A certificate of compliance and fire clearance certificate from the contractor and fire chief respectively.</p> <p>f) A painting guarantee.</p> <p>g) A mechanical certificate of compliance.</p> <p>h) A structural certificate of compliance.</p> <p>i) A waterproofing certificate of compliance.</p> <p>j) Borehole drilling pumping tests certificate to determine the safe and</p> <p>k) sustainable groundwater yields</p> <p>l) Groundwater Test certificate by an accredited laboratory</p> <p>m) for hydro chemical analysis to determine if the water is suitable for human consumption</p> <p>n) Any other applicable guarantees.</p> <p>19.8.3 A complete set of maintenance and operating manuals together with all workmanship and material warranties and guarantees are to be compiled and issued to the principal agent prior to practical completion being granted. In addition to the abovementioned documentation a formal "on site" handover will be required to be conducted with every discipline in the presence of the contractor as well as the applicable services subcontractor.</p> <p>19.9 After the issue of the certificate of practical completion, entry upon the works to make good defects shall be at such reasonable times as shall be agreed by the principal agent.</p>
<p>25.0</p>	<p>WORKS COMPLETION</p> <p>Clause 25.0 is amended by changing the word list to lists.</p> <p>Clause 25.0 is amended by adding the following clauses to the end thereof:</p> <p>25.6 The contractor shall generally attend to defects during the defects liability period on a progressive basis and will not be permitted to wait until the end of the patent defects liability period or until the amount of defects accumulates in order to attend to a comprehensive list of defects.</p> <p>25.7 Should the defect be deemed by the principal agent to be urgent he shall notify the contractor in writing to attend to such defect. The contractor shall immediately on receipt of this notice give the principal agent a definite time and date on which he will start the rectification of the said defect.</p> <p>Should the time and date be unacceptable in the opinion of the principal agent or should the contractor not start at this agreed time and date and complete the rectification in a diligent manner, the employer reserves the right to complete the outstanding works and deduct the cost of such work as certified by the principal agent from amounts owing to the contractor.</p>
<p>23.0</p>	<p>REVISION OF DATE OF PRACTICAL COMPLETION</p> <p>Clause 23.1.1 shall be deleted and replaced with the following:</p>

Clause	Data
	<p>23.1.1 Exceptionally inclement weather</p> <p>"Exceptionally inclement weather" shall be defined as weather conditions in excess of the monthly average recorded for the past 10 (ten) years by the nearest commonly recognised weather bureau in the region of the project.</p> <p>The contractor shall be deemed to have allowed in his programme for the works and opposite this item or in his rates, for the cost of all delays as a result of weather conditions which are average.</p> <p>A delay caused by exceptionally inclement weather conditions will be regarded as a delay only if, in the opinion of the principal agent, all progress on an item or items of work on the critical path of the working programme of the contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the contractor shall make provision in his programme of work for an expected delay of "n" working days caused by normal rainy weather, for which he will not receive any extension of time, where "n" equals 30 days. Extension of time during working days will be granted to the degree to which actual delays, as defined above, exceed the number of "n" working days.</p> <p>Clause 23.0 is amended by the addition of the following clauses to the end thereof:</p> <p>23.9 Revision to the date for practical completion shall only be considered when work on the critical path of the agreed programme for the works is delayed.</p>
<p>25.0</p>	<p>INTERIM PAYMENT</p> <p>Clause 25.2 is deleted and replaced by the following:</p> <p>25.2 The principal agent shall issue an interim payment certificate every month until the issue of the final payment certificate. The contractor is to issue his payment requisition to the quantity surveyor by the 15th of each month in preparation for the quantity surveyor to issue a valuation to the principal agent by the 23rd of each month, failure to submit a claim will entitle the quantity surveyor to submit a reasonable value for the works done. The payment certificate shall be issued on the date stated and may be for a nil or negative amount.</p> <p>Clause 25.5 is amended by the deletion of the first sentence and replaced with the following:</p> <p>Materials and goods shall not, as a general rule, be included in the value certified. Should the principal agent agree, such materials and goods shall be included in the value certified only where, to the satisfaction of the principal agent, the contractor has issued a bank guarantee to the employer in a format to be approved by the principal agent.</p> <p>Clause 25.12 is amended as follows:</p> <p>Clause 25.12.1 is deleted and replaced with the following:</p>

Clause	Data
	<p>25.12.1 Ninety per cent (90%) of such value in interim payment certificates issued up to the date of practical completion.</p> <p>Clause 25.12.2 is deleted and replaced with the following:</p> <p>25.12.2 Ninety-five per cent (95%) of such value in interim payment certificates issued on to the date of practical completion and up to but excluding the date of final completion</p> <p>Clause 31.8.3 is deleted</p> <p>Clause 25.10 is deleted and replaced with the following:</p> <p>25.10 The employer shall pay to the contractor the amount certified in an interim payment certificate within thirty (30) calendar days of the date of receipt of the contractor's tax invoice for the amount certified.</p> <p>Clause 25.15 is deleted and replaced with the following clause:</p> <p>25.15 The employer shall pay the contractor the amount certified in the final payment certificate within thirty (30) calendar days of the date of issue of the final payment certificate subject to the contractor giving the employer a tax invoice for the amount due.</p> <p>Clause 25.16 is deleted and replaced with the following clause:</p> <p>25.16 The contractor shall accept or object to the final account within forty-five (45) calendar days of receipt thereof. On acceptance, or should the contractor not object with reasons to the final account within such period, the principal agent shall issue the final payment certificate.</p>
<p>34.0</p>	<p>FINAL ACCOUNT AND FINAL PAYMENT</p> <p>Clause 34.3 is deleted and replaced with the following clause:</p> <p>34.3 The contractor shall accept or object to the final account within forty-five (45) calendar days of receipt thereof. On acceptance, or should the contractor not object with reasons to the final account within such period, the principal agent shall issue the final payment certificate [34.5].</p> <p>Clause 34.10 is deleted and replaced with the following clause:</p> <p>-</p> <p>34.10 The employer shall pay the contractor the amount certified in the final payment certificate within thirty (30) calendar days of the date of issue of the final payment certificate subject to the contractor giving the employer a tax invoice for the amount due.</p>

Clause	Data
29.0	<p>TERMINATION BY THE EMPLOYER – CONTRACTOR'S DEFAULT</p> <p>Clause 29.1 is amended by the addition of the following clauses to the end thereof:</p> <p>29.1.4 The contractor's refusal or neglect to comply strictly with any of the conditions of contract.</p> <p>29.1.5 The contractor's estate being sequestered, liquidated or surrendered in terms of the insolvency laws in force with the Republic of South Africa.</p> <p>29.1.6 The contractor, in the judgment of the employer, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.</p> <p>29.1.7 The contractor fails to perform in terms of the agreement or the employer on reasonable ground believe that the contractor my not be able to comply with his obligation.</p>
30.0	<p>SETTLEMENT OF DISPUTES SETTLEMENT BY THE PARTIES</p> <p>Clause 40.2.1 and 40.3 are deleted.</p>
31.0	<p>NEW CLAUSE – SMALL CONTRATOR AND TARGETED ENTERPRISE DEVELOPMENT</p> <p>New Clause 31.0 is added, as follows:</p> <p>The penalty for failing to achieve the monetary value of the target set by the Employer for contract participation by Targeted Enterprises and local SMME contractors in terms of Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Works, is as follows:</p> <p>For SMME:</p> <ul style="list-style-type: none"> • If the Contractor fails to ensure and prove that 40% of the 30% SMME Target Spend is met at the time that 50% of the total contract period is reached, the Employer may, at the Employer's discretion, step in to facilitate the Target being met for which such costs will be recovered from the Contractor through the Recovery Statement • If the Contractor fails to ensure and prove that 60% of the 30% SMME Target Spend is met at the time that 75% of the total contract period is reached, the Employer shall, at the Employer's discretion, apply a Penalty of 50% of the shortfall (shortfall = 75% of 30% Target minus Actual Proven Amount Spent) on the 30% SMME Target Spend Value • If the Contractor fails to ensure and prove that 100% of the 30% SMME Target Spend is met at the time that 95% of the total contract period is reached, the Employer shall, at the Employer's discretion, apply a Penalty of 50% of the shortfall

Clause	Data
	<p>(shortfall = 75% of 30% Target minus Actual Proven Amount Spent) on the 30% SMME Target Spend Value</p> <ul style="list-style-type: none"> • Notwithstanding anything to the contrary herein, the Contractor will not be relieved of the Contractor's obligation to pay all amounts due to an SMME(s), on a fortnightly and/or monthly basis, regardless of when the Contractor receives payments from the Employer. Should the Contractor fail to fulfil this obligation the Employer shall, at the Employer's discretion, apply a penalty of 10% of the amount(s) due to the SMME(s) on a monthly basis and pay a portion of such amounts (for which such portion shall be determined at the Employer's discretion) directly to the affected SMME(s) <p>Notwithstanding the Contractor's obligation to meet the respective Target Spends, the Contractor shall provide a status report on the progress of meeting this target in the requisite Progress Reports.</p> <p>Furthermore, it is a condition of this tender that the successful contractor is required to take full responsibility of managing all appointed Sub-contractors and the quality of their works.</p>
<p>32.0</p>	<p>NEW CLAUSE – PROGRESS REPORTS AND PROGRAMME UPDATES</p> <p>New Clause 32.0 is added, as follows:</p> <p>The Contractor is to generate progress reports and programme updates in the format to be provided by the Employer failing which Penalties will be applied as follows:</p> <ul style="list-style-type: none"> • EPWP Targets & Reporting – The Contractor shall ensure that EPWP Targets and Reporting requirements are met at all times. Reporting shall be in the format to be provided by the Employer and at intervals prescribed by the Employer. The penalty for failure, on the part of the Contractor, to submit any EPWP Reports (including all requisite back-up documentation) on the 20th day of each month (or the previous working day should the 20th fall on a non-working day) until the issue of the Certificate of Practical Completion shall be subject to a penalty of R1000.00 per report per calendar day, until the report is submitted and shall not be reversible. The Contractor shall report on the progress of all aspects relating to the Contract as requested in the report format to be provided by the Employer. • Monthly Progress Reporting: The penalty for failure, on the part of the Contractor, to submit any monthly progress report on the 20th day of each month (or the previous working day should the 20th fall on a non-working day) until the issue of the Certificate of Practical Completion shall be subject to a penalty of R1000.00 per report per calendar day, until the report is submitted and shall not be reversible. The Contractor shall report on the progress of all aspects relating to the Contract as requested in the report format to be provided by the Employer. Progress reports shall further include a report on SMME's and Targeted Enterprise for the JDA that includes the following: <ul style="list-style-type: none"> ○ SMME resources on the site, i.e. supervisors, labour, plant tools and equipment ○ SMME progress of works on site

Clause	Data
	<ul style="list-style-type: none"> ○ SMME Sub-contractor quality control on site ○ SMME expenditure on the Project versus target expenditure ○ Copies of minutes of the SMME Sub-contractor Contractor progress meetings ○ SMME training on the Project ○ Concerns and improvements to be made <p>● Interim Progress Reporting: The penalty for failure, on the part of the Contractor, to submit any interim progress report on the 10th day of each month (or the previous working day should the 10th fall on a non-working day) until the issue of the Certificate of Practical Completion shall be subject to a penalty of R500.00 per report per calendar day, until the report is submitted and shall not be reversible. The Contractor shall report on the progress of all aspects relating to the Contract as requested in the report format to be provided by the Employer. Progress reports shall further include a report on SMME's for the JDA that includes the following:</p> <ul style="list-style-type: none"> ○ SMME resources on the site, i.e. supervisors, labour, plant tools and equipment ○ SMME progress of works on site ○ SMME quality control on site ○ SMME expenditure on the Project versus target expenditure ○ Copies of minutes of the SMME Sub-contractor and Contractor progress meetings ○ SMME training on the Project Concerns and improvements to be made
	<p>Refer to the Preliminaries Section in the Bill of Quantities for any additional amendments to the Standard JBCC Document.</p>

PART 2: Data Provided by the Contractor

The Contractor is advised to read the *JBCC Principal Building Agreement (May 2018, Edition 6.2)* and section 3.0 *Payment and adjustment of preliminaries* contained in the associated *Contract Data CE*, published by the Joint Building Contracts Committee, in order to understand the implications of this Data which is required to be completed. Copies of these documents may be obtained from the Association of South African Quantity Surveyors (011-3154140), the Master Builders Association (011-205-9000) the South African Association of Consulting Engineers (011-4632022) or the South African Institute of Architects (011-4860684)

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

Clause	Data with reference to the JBCC Principal Building Agreement (Edition 6.2, May 2018)	
1.0	The Contractor is. Name : The address of the Contractor is: Address (physical) : Address (postal) : Telephone : Facsimile: E-mail : TAX / VAT Registration No :	
2.1	The security provisions selected are: [11.1.1] Variable construction guarantee [11.1.2] Fixed Construction Guarantee and Payment Reduction	NO YES
3.2.4	Contract Value shall be adjusted according to the CPAP: Not applicable This tender is for a fixed rate contract.	
3.2.5 [C 3.0]	Payment of preliminaries: Option A	
3.2.6 [C 4.0]	Adjustment of preliminaries: Option A	

.....
Signature

.....
Date

JDA JBCC

C1.3 CONSTRUCTION GUARANTEE

GUARANTOR DETAILS AND DEFINITIONS

Guarantor means _____
Physical address _____
Guarantor's signatory 1 _____ Capacity _____
Guarantor's signatory 2 _____ Capacity _____
Employer means _____
Contractor means _____
Principal Agent means _____
Works means _____
Site means _____
Agreement means The JBCC Principal Building Agreement (Edition 6.2., May 2018)
Contract Sum means The accepted amount inclusive of tax of
Amount in words _____
Guaranteed Sum means The maximum aggregate amount of
Amount in words _____
Construction Guarantee (Insert Variable or Fixed) (Insert expiry date)

AGREEMENT DETAILS

Sections: Total sections (No or n/a) Last section (No / Identification or n/a)
Principal Agent issues: Interim payment certificates, Final payment certificate, Practical completion certificate/s and Final completion certificate/s

1. VARIABLE CONSTRUCTION GUARANTEE

1.1 Where a variable Construction Guarantee in terms of the Agreement has been selected this 1.0 with 3.0 to 13.0 shall apply. The Guarantor's liability shall be limited to the diminishing amounts of the Guaranteed Sum as follows:

GUARANTOR'S LIABILITY

PERIOD OF LIABILITY

1.1.1 Maximum Guaranteed Sum (not exceeding 10% of the contract sum) in the amount of:

From and including the date of issue of this Construction Guarantee and up to and including the date of the interim payment certificate certifying in excess of 50% of the contract sum

Amount in words: _____

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1.1.2 Reducing to the Guaranteed Sum (not exceeding 5% of the contract sum) in the amount of:

From and including the day after the date of the aforesaid interim payment certificate and up to and including the date of the only practical completion certificate or last practical completion certificate where there are sections

Amounts in words: _____

1.1.3 Reducing to the Guaranteed Sum (not exceeding 4.0% of the contract sum) in the amount of:

From and including the day after the date of the applicable practical completion certificate and up to and including the date of the only final completion certificate or last final completion certificate where there are sections

Amounts in words: _____

1.1.4 Reducing to the Guaranteed Sum (not exceeding 2.0% of the contract sum) in the amount of:

Amounts in words: _____

1.2 For avoidance of doubt the Guarantor's liability limits set out in 1.1.1 to 1.1.4 shall apply in respect of any claim received by the Guarantor during the period in question

2. FIXED CONSTRUCTION GUARANTEE

2.1 Where a fixed Construction Guarantee in terms of the Agreement has been selected this 2.0 with 3.0 to 13.0 shall apply. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum as follows:

GUARANTOR'S LIABILITY

Maximum Guaranteed Sum (not exceeding 10.0% of the contract sum) in the amount of:

PERIOD OF LIABILITY

From and including the date of issue of this Construction Guarantee and up to and including the date of the only practical completion certificate or the last practical completion certificate where there are sections, upon which this Construction Guarantee shall expire

Amounts in words: _____

3. The Guarantor hereby acknowledges that:

3.1 Any reference in this Guarantee to the Agreement 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 Guarantee is restricted to the payment of money

4. Subject to the Guarantor's maximum liability referred to in 1.0 or 2.0, 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 Principal Agent in an interim or final payment certificate has not been

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made in terms of the Agreement 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) calendar days has elapsed since the first written demand in terms of 4.1 and that the sum certified has still not been paid therefore the Employer calls up this Construction Guarantee and demands payment of the sum certified from the Guarantor

4.3 A copy of the said payment certificate which entitles the Employer to receive payment in terms of the Agreement of the sum certified in 4.0

5. Subject to the Guarantor's maximum liability referred to in 1.0 or 2.0, the Guarantor undertakes to pay 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 Construction Guarantee stating that:

5.1 The Agreement has been cancelled due to the Contractor's default and that the Construction Guarantee is called up in terms of 5.0. The demand shall enclose a copy of the notice of cancellation; or

5.2 A provisional sequestration or liquidation court order has been granted against the Contractor and that the Construction Guarantee is called up in terms of 5.0. The demand shall enclose a copy of the court order

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4.0 and 5.0 shall not exceed the Guarantor's maximum liability in terms of 1.0 or 2.0

7. Where the Guarantor is a registered insurer and has made payment in terms of 5.0, 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 the Construction Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Construction 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 4.0 or 5.0 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor

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

10. The Guarantor chooses the physical address as stated above for all purposes in connection herewith

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11. This Construction Guarantee is neither negotiable nor transferable and shall expire in terms of either 1.1.4 or 2.1, or payment in full of the Guaranteed Sum or on the Guarantee expiry date, whichever is the earlier, where after no claims will be considered by the Guarantor. The original of this Construction Guarantee shall be returned to the Guarantor after it has expired

12. This Construction Guarantee, with the required demand notices in terms of 4.0 or 5.0, shall be regarded as a liquid document for the purpose of obtaining a court order

13. Where this Construction 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 _____

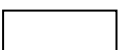
Guarantor's
Signatory 1 _____

Guarantor's
Signatory 2 _____

Witness _____

Witness _____

Guarantor's seal or stamp



C1.4 OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

THIS AGREEMENT between Johannesburg Development Agency (JDA) (hereinafter called “the Employer”) on the one part, herein represented by:in his/her capacity as..... and.....

(hereinafter called “the Contractor”) of the other part herein represented byin his/her capacity as

WHEREAS the Employer is desirous that certain works be constructed, being contract **CONSTRUCTION OF SEPTIC TANK, FENCING AND AT EIKENHOFF FARM AND BOREHOLE DRILLING AND EQUIPPING AND ELECTRICAL INSTALLATION AT NORTHERN FARM – CONTRACT NO.: JDA/SOCDEVFARMS/20.7.3.B.8088** and has accepted a tender by the Contractor for the construction, completion and maintenance of such works and whereas the Employer and the Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Contractor with the provisions of the Occupational Health and Safety Act 1993 (Act 85 of 1993).

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Contractor shall execute the work in accordance with the contract documents pertaining to this contract.
2. This Agreement shall hold good for the duration of construction, commencing from the handover of the site up to the end of the defects liability period.
3. Should the contract be terminated for any reason; this agreement shall lapse upon the date of termination.
4. The Contractor 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 thereto.
 - (b) All the requirements of the Construction Regulations hereinafter referred to as the “Regulations”, together with any amendments thereto.
 - (c) The Health and Safety Specification of the Employer as pertaining to the Contractor and to all his subcontractors.
5. In addition to the requirements of the contract, the Contractor 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 and the Regulations.
6. The Contractor is responsible for the compliance with the Act and the Regulations by all his subcontractors, whether or not selected or nominated and/or approved by the Employer.
7. The Contractor 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.

8. The Contractor undertakes to ensure that he and/or his subcontractors and/or their respective employees will at all times comply with the following conditions:

- (a) The Contractor undertakes to comply with all provisions of the Act and its Regulations.
- (b) The Contractor will be obliged to report to the Employer on a regular basis regarding compliance by the Contractor with the Act and its Regulations.
- (c) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Contractor 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.
- (d) The Employer hereby records an interest in the issue of any formal enquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Contractor 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:

for and on behalf of the Contractor who warrants to be duly authorised to do so

Name: _____

Designation: _____

As witnesses:

1. _____

for and on behalf of the Employer who warrants to be duly authorised to do so

Name: _____

Designation: _____

As witnesses:

1. _____

C1.5 AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993

THIS AGREEMENT is made between the Johannesburg Development Agency represented by the(hereinafter called the EMPLOYER of the one part, herein represented by: in his/her capacity as: and: (hereinafter called the CONTRACTOR) of the other part, herein represented by..... in his/her capacity as: duly authorised to sign on behalf of the Contractor.

WHEREAS the CONTRACTOR is the Mandatory of the EMPLOYER in consequence of an agreement between the CONTRACTOR and the EMPLOYER in respect of

CONTRACT NO. : JDA/SOCDEVFARMS/20.7.3.B.8088

for the

CONSTRUCTION OF SEPTIC TANK, FENCING AND AT EIKENHOFF FARM AND BOREHOLE DRILLING AND EQUIPPING AND ELECTRICAL INSTALLATION AT NORTHERN FARM

AND WHEREAS the EMPLOYER and the CONTRACTOR have agreed to enter into an agreement in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993, as amended by OHS Act Amendment Act No 181/1993 (hereinafter referred to as the ACT);

NOW THEREFORE the parties agree as follows:

1. The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
2. The CONTRACTOR undertakes to fully comply with all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations: Provided that should the EMPLOYER have prescribed certain arrangements and procedures that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
3. The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures, if any, imposed by the ACT and Regulations, and the CONTRACTOR expressly absolves the EMPLOYER and the Employer's AGENTS from being obliged to comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedures in respect of the work included in the contract.
4. The CONTRACTOR agrees that any duly authorised officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with his undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.

5. The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the ACT and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

Thus signed at for and on behalf of the **CONTRACTOR**
on this the day of 20.....

SIGNATURE: _____

NAME AND SURNAME: _____

CAPACITY: _____

WITNESS: _____

Thus signed at for and on behalf of the **EMPLOYER** on this
the day of 20.....

SIGNATURE: _____

NAME AND SURNAME: _____

CAPACITY: _____

WITNESS: _____

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS

1. The Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Sixth Edition (Revised)), 1999. Where applicable the:
 - a) civil engineering work has been drawn up in accordance with the provisions of the latest edition of SABS 1200 Standardised Specifications for Civil Engineering Works.
 - b) mechanical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Refrigeration, Air-Conditioning and Ventilation Installations, published by the South African Association of Quantity Surveyors, July 1990).
 - c) electrical work has been drawn up in accordance with the provisions of the Model Bills of Quantities for Electrical Work, published by the South African Association of Quantity Surveyors, (July, 2005).
2. The agreement is based on the JBCC Principal Building Agreement, prepared by the Joint Building Contracts Committee, Edition 6.2, May 2018. The additions, deletions and alterations to the JBCC Principal Building Agreement as well as the contract specific variables are stated in the Contract Data.
3. The ASAQS Preliminaries compiled by the Association of South African Quantity Surveyors, August 2016, are forming part of the overall Preliminaries Bill of Quantities and the preliminaries specific variables are stated within the Preliminaries Bills of Quantities.
4. Descriptions in the Bills of Quantities are abbreviated and comply generally with those in the "Model Preambles for Trades 2017".
5. Unless otherwise stated, items are measured net in accordance with the drawings and no allowance is made for waste.
6. The prices and rates to be inserted in the Bills of Quantities are to be the full inclusive for the work described under the several items. Such prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. Reasonable prices shall be inserted as these will be used as a basis for assessment of payment for additional work that may have to be carried out.
7. A price or rate is to be entered against each item in the Bills of Quantities, whether the quantities are stated or not. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities.
8. Except where rates only are required, insert all amounts to be included in the total tendered price in the "amount" column and show the corresponding total tendered price.
9. It will be assumed that prices included in the Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information on standards).

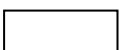
JOHANNESBURG DEVELOPMENT AGENCY (JDA)

10. The drawings listed in the Scope of Works used for the setting up these Bills of Quantities are kept by the quantity surveyor and can be viewed at any time during office hours up until the completion of the works.
11. Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted, subject to the Principal Agent's approval.
12. Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")
13. The Contract Data and the standard form of contract referenced therein must be studied for the full extent and meaning of each and every clause set out in Section 1 (Preliminary and General) of the Bills of Quantities
14. The Bills of Quantities is not intended for the ordering of materials or programming of the works. Any ordering of materials or programming of the works, based on the Bills of Quantities, is at the Contractor's risk.
15. The amount of the Preliminary Section to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount for the Preliminary and General Section and any amount in respect of contract price adjustment provided for in the contract.
16. Where the initial contract period is extended, the monthly charge shall be calculated on the basis as set out in 15 but taking into account the revised period for completing the works.
17. The amount or items of the Preliminary Section shall be adjusted to take account of the theoretical financial effect which changes in time or value (or both) have on this section. Such adjustments shall be based on adjustments in the following categories as recorded in the Bills of Quantities:
 - a) an amount which is not to be varied, namely Fixed (F)
 - b) an amount which is to be varied in proportion to the contract value, namely Value Related (V); and
 - c) an amount which is to be varied in proportion to the contract period as compared to the initial construction period excluding revisions to the construction period for which no adjustment to the contractor is not entitled to in terms of the contract, namely Time Related (T).
18. Where no provision is made in the Bills of Quantities to indicate which of the three categories in 17 apply or where no selection is made, the adjustments shall be based on the following breakdown:
 - a) 10 percent is Fixed;
 - b) 15 percent is Value Related
 - c) 75 percent is Time Related.
19. The adjustment of the Preliminary Section shall apply notwithstanding the actual employment of resources in the execution of the works. The contract value used for the adjustment of the Preliminary Section shall exclude any contingency sum, the amount for the Preliminary Section and any amount in respect of contract price adjustment provided for in the contract. Adjustments in respect of any staged or sectional completion shall be prorated to the value of each section.
20. ~~As a guide, the Bills of Quantities have separately outlined scope of works to be executed by local SMME's as per the requirements of this tender (minimum 30% SMME spend). In this regard, separate envisaged preliminaries and general items have been included for each respective trade, and the Contractor is duly advised to strictly price for these preliminary items separately~~

from those of the “Main Contractors” scope; failure to do so will/may result in the tenderer being disqualified from the bidding process.

21. 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 difference between the quantities in the Bill of Quantities and the quantities certified for payment. The Ordering of materials is not to be based on the Bill of Quantities, but only on information issued for construction purposes.
22. For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:
23. the
- | | |
|----------|---|
| 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 each which the Tenderer tenders to do the work |
| Amount | : The quantity of an item multiplied by the tendered rate of the (same) item |
| Sum | : An amount tendered 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 |
24. The units of measurements 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 (Cost of material supplied excluding vat, profit and labour, but including transport and delivery costs) |
| Prov Sum | = Provisional Sum |
25. Occupational Health and Safety Act and Construction Regulations
A payment item in the Bill of Quantities has been made to allow the tenderers to price for compliance with OHS Act and the Construction Regulations. This payment item, must also include for the erection of Visitors Indemnity Signs and for ensuring that visitors receive instructions and sign an indemnity declaration.

C2.2 BILL OF QUANTITIES



Item No		Quantity	Amount	
	<p><u>SECTION NO 1</u></p> <p><u>BILL NO. 1</u> <u>PRELIMINARIES</u></p> <p><u>BUILDING AGREEMENT AND PRELIMINARIES</u></p> <p>The JBCC Principal Building Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described</p> <p>The JBCC Principal Building Agreement contract data form an integral part of this agreement</p> <p>The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2 - May 2018) shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described</p> <p>The contractor is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause</p> <p>The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only</p> <p>Where any item is not relevant to this agreement such item is marked N/A signifying "not applicable"</p> <p>Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the abovementioned documents</p> <p><u>PREAMBLES FOR TRADES</u></p> <p>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>Supplementary preambles and/or specifications are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R		

	<p style="text-align: right;">Brought Forward</p> <p>The contractor's prices for all items throughout these bills of quantities shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications</p> <p><u>STRUCTURE OF THIS PRELIMINARIES BILL</u></p> <p>Section A : A recital of the headings of the individual clauses in the aforementioned JBCC Principal Building Agreement</p> <p>Section B : A recital of the headings of the individual clauses in the aforementioned JBCC General Preliminaries</p> <p>Section C : Any special clauses to meet the particular circumstances of the project</p> <p><u>PRICING OF PRELIMINARIES</u></p> <p>Should the contractor select Option A in the contract data for the adjustment of preliminaries, the amounts entered against the relevant items in these preliminaries are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)</p> <p><u>SECTION A: PRINCIPAL BUILDING AGREEMENT</u></p> <p><u>Interpretation (A1-A7)</u></p> <p>1 Clause 1.0 - Definitions and interpretation</p> <p>Pricing of bills of quantities</p> <p>The contractor is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this agreement. Value Added Tax (VAT) is to be separately stated on the summary page of these bills of quantities</p> <p>Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained</p>	R	
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		R

	<p style="text-align: right;">Brought Forward</p> <p>Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary</p> <p>Abbreviated descriptions</p> <p>The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice</p> <p>Legal status of contractor</p> <p>If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:</p> <ol style="list-style-type: none"> 1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement 2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons 3. The contractor shall not alter its composition or legal status without the prior written consent of the employer <p>F:..... V:..... T:.....</p> <p>2 Clause 2.0 - Law, regulations and notices</p> <p>NHBRC levies</p> <p>The employer shall allow for and pay any levies required by the National Home Builders Registration Council (NHBRC). The contractor warrants that he is registered and will maintain registration with the NHBRC for the duration of this agreement [2.1]</p> <p>3 F:..... V:..... T:.....</p> <p>4 Clause 3.0 - Offer and acceptance</p> <p>F:..... V:..... T:.....</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	<p style="text-align: center;">R</p> <p style="text-align: center;">Item</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">Item</p> <p style="text-align: center;">R</p>	
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	Brought Forward	R	
5	<p>Clause 4.0 - Cession and assignment</p> <p>F:..... V:..... T:.....</p>	Item	
6	<p>Clause 5.0 - Documents</p> <p>Value Added Tax</p> <p>Provision is made in the summary page of these bills of quantities for the inclusion of Value Added Tax (VAT)</p> <p>Priced document as specification</p> <p>Clause 5.4 is deemed to be deleted</p> <p>The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any.</p> <p>Electronic issue of drawings</p> <p>All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6]</p> <p>F:..... V:..... T:.....</p>	Item	
7	<p>Clause 6.0 - Employer's agents</p> <p>Delegated authority</p> <p>The authority of the principal agent to issue contract instructions [17.1] and perform duties for specific aspects of the works is delegated to agents as follows [6.2]. This does not preclude the principal agent from issuing such contract instructions:</p> <p>1. <u>Architect</u></p> <p>1.1 Duties [6.2] :</p> <p>The architect is responsible for the architectural design, functional design and quality inspection of the works</p> <p>1.2 Contract instructions [6.2; 17.1] :</p> <p>1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

<p style="text-align: right;">Brought Forward</p> <p>1.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>1.2.3 The site [13.0]</p> <p>1.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>1.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>1.2.7 Removal or re-execution of work</p> <p>1.2.8 Removal or substitution of any materials and goods</p> <p>1.2.9 Protection of the works</p> <p>1.2.10 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>1.2.11 Rectification of defects [21.2]</p> <p>1.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>1.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums</p> <p>1.2.14 Appointment of a subcontractor [14.0; 15.0]</p> <p>1.2.15 Work by direct contractors [16.0]</p> <p>1.2.16 On suspension or termination, protection of the works, removal of construction equipment and surplus materials and goods [29.0]</p> <p>2. <u>Quantity surveyor</u></p> <p>2.1 Duties [6.2] :</p> <p>The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the works</p> <p>2.2 Contract instructions [6.2; 17.1] :</p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>2.2.1 No contract instructions delegated to the quantity surveyor.</p> <p>3. <u>Civil and structural engineer</u></p> <p>3.1 Duties [6.2] :</p> <p>The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the works</p> <p>3.2 Contract instructions [6.2; 17.1] :</p> <p>3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>3.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>3.2.3 The site [13.0]</p> <p>3.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>3.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>3.2.7 Removal or re-execution of work</p> <p>3.2.8 Removal or substitution of any materials and goods</p> <p>3.2.9 Protection of the works</p> <p>3.2.10 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>3.2.11 Rectification of defects [21.2]</p> <p>3.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>3.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>4. <u>Mechanical engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>4.1 Duties [6.2] :</p> <p>The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>4.2 Contract instructions [6.2; 17.1] :</p> <p>4.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>4.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>4.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>4.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>4.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>4.2.6 Removal or re-execution of work</p> <p>4.2.7 Removal or substitution of any materials and goods</p> <p>4.2.8 Protection of the works</p> <p>4.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>4.2.10 Rectification of defects [21.2]</p> <p>4.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>4.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>5. <u>Electrical engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>5.1 Duties [6.2] :</p> <p>The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>5.2 Contract instructions [6.2; 17.1] :</p> <p>5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>5.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>5.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>5.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>5.2.6 Removal or re-execution of work</p> <p>5.2.7 Removal or substitution of any materials and goods</p> <p>5.2.8 Protection of the works</p> <p>5.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>5.2.10 Rectification of defects [21.2]</p> <p>5.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>5.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>6. <u>Wet services engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

	<p style="text-align: right;">Brought Forward</p> <p>6.1 Duties [6.2] :</p> <p>The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the works</p> <p>6.2 Contract instructions [6.2; 17.1] :</p> <p>6.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>6.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>6.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>6.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>6.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>6.2.6 Removal or re-execution of work</p> <p>6.2.7 Removal or substitution of any materials and goods</p> <p>6.2.8 Protection of the works</p> <p>6.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>6.2.10 Rectification of defects [21.2]</p> <p>6.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>6.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>7. <u>Fire consultant</u></p> <p>7.1 Duties [6.2] :</p> <p>The fire consultant is responsible for all aspects of rational fire design and quality inspection of the works</p> <p>7.2 Contract instructions [6.2; 17.1] :</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	<p style="text-align: center;">R</p>		
		<p style="text-align: center;">R</p>		

<p style="text-align: right;">Brought Forward</p> <p>7.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>7.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>7.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>7.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>7.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>7.2.6 Removal or re-execution of work</p> <p>7.2.7 Removal or substitution of any materials and goods</p> <p>7.2.8 Protection of the works</p> <p>7.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>7.2.10 Rectification of defects [21.2]</p> <p>7.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>7.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>8. <u>Health and safety consultant</u></p> <p>8.1 Duties [6.2] :</p> <p>The health and safety consultant is responsible for all aspects of health and safety of the works. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the works. He shall:</p> <p>8.1.1 Act as the employer's agent in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended</p> <p>8.1.2 Prepare and update the health and safety specification for the works</p> <p style="text-align: right;">Carried Forward</p>	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

	Brought Forward	R	
8.1.3	Agree with the contractor the health and safety plan for the works		
8.1.4	Carry out regular audits to ensure adherence to the safety plan and compliance with the act and regulations		
8.1.5	Stop the execution of the works where the agreed specification or plan is not adhered to.		
	F:..... V:..... T:.....	Item	
8	Clause 7.0 - Design responsibility		
	F:..... V:..... T:.....	Item	
	<u>Insurances and securities (A8-A11)</u>		
9	Clause 8.0 - Works risk		
	F:..... V:..... T:.....	Item	
10	Clause 9.0 - Indemnities		
	F:..... V:..... T:.....	Item	
11	Clause 10.0 - Insurances		
	F:..... V:..... T:.....	Item	
12	Clause 11.0 - Securities		
	Guarantee for payment		
13	The employer shall provide to the contractor a guarantee for payment in the amount ofNot Applicable.....Rand (R.....N/A.....) [11.5.1]. The contractor shall consequently waive his lien or right of continuing possession of the works [11.10]		
	F:..... V:..... T:.....	N/A	
	Extension of waiver of lien		
14	The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times [11.10]		
15	F:..... V:..... T:.....	Item	
	Carried Forward	R	
	Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries		

	Brought Forward	R	
	<u>Execution (A12 - A17)</u>		
16	<p>Clause 12.0 - Obligations of the parties</p> <p>Office accommodation</p> <p>The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]</p> <p>Notice board</p> <p>The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18]</p> <p>Statutory and other notices</p> <p>The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard</p> <p>It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto</p> <p>F:..... V:..... T:.....</p>	Item	
17	<p>Clause 13.0 - Setting out</p> <p>F:..... V:..... T:.....</p>	Item	
18	<p>Clause 14.0 - Nominated subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
19	<p>Clause 15.0 - Selected subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
20	<p>Clause 16.0 - Direct contractors</p> <p>Attendance on direct contractors</p> <p>In respect of direct contractors the contractor shall:</p> <ol style="list-style-type: none"> 1. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] <p>F:..... V:..... T:.....</p>	Item	
21	<p>Clause 17.0 - Contract instructions</p> <p>Site instructions</p> <p>Instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the contractor .</p> <p>F:..... V:..... T:.....</p> <p><u>Completion (A18 - A24)</u></p>	Item	
22	Clause 18.0 - Interim completion	N/A	
23	<p>Clause 19.0 - Practical completion</p> <p>F:..... V:..... T:.....</p>	Item	
24	<p>Clause 20.0 - Completion in sections</p> <p>F:..... V:..... T:.....</p>	Item	
25	<p>Clause 21.0 - Defects liability period and final completion</p> <p>F:..... V:..... T:.....</p>	Item	
26	<p>Clause 22.0 - Latent defects liability period</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
27	<p>Clause 23.0 - Revision of the date for practical completion</p> <p>Substitution of materials and goods</p> <p>The removal or substitution of any materials and goods which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value [17.1.8; 23.1 & 2]</p> <p>F:..... V:..... T:.....</p>	Item	
28	<p>Clause 24.0 - Penalty for late or non-completion</p> <p>F:..... V:..... T:.....</p> <p>Payment (A25 - A27)</p>	Item	
29	<p>Clause 25.0 - Payment</p> <p>Prices submitted</p> <p>Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the certificate of final completion, it shall be in writing</p> <p>F:..... V:..... T:.....</p>	Item	
30	<p>Clause 26.0 - Adjustment of the contract value and final account</p> <p>Fluctuations in costs</p> <p>All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax and CPAP (Where applicable), shall be for the account of the contractor [26.9.5]</p> <p>Contract Price Adjustment Provision to be calculated in accordance with the CPAP Indices Application Manual for use with P0151.1 indices published by Statistics South Africa</p> <p>Tenant installation/user requirements delayed</p> <p>There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to practical completion</p>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	<p>Should the contractor be instructed to do so he shall execute this work under the conditions pertaining to this agreement on the basis that a separate amount for preliminaries appurtenant to this work (if applicable) is agreed to between the contractor and the principal agent and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of practical completion of the works</p> <p>The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission.</p> <p>Cost of claims</p> <p>All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs</p> <p>Claims from subcontractors</p> <p>The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim [26.6]</p> <p>F:..... V:..... T:.....</p>		
31	<p>Clause 27.0 - Recovery of expense and/or loss</p> <p>F:..... V:..... T:.....</p>	Item	
		Item	
	<u>Suspension and termination (A28 - A29)</u>		
32	<p>Clause 28.0 - Suspension by the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
33	<p>Clause 29.0 - Termination</p> <p>F:..... V:..... T:.....</p>	Item	
	<u>Dispute resolution (A30)</u>		
34	<p>Clause 30.0 - Dispute resolution</p> <p>F:..... V:..... T:.....</p>	Item	
35	<u>Agreement</u>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties F:..... V:..... T:.....	Item	
36	<u>Contract data</u> Tenderer's selections Before submission of his tender the contractor is to complete the tenderer's selections in the contract data F:..... V:..... T:.....	Item	
	<u>SECTION B: GENERAL PRELIMINARIES</u> <u>Definitions and interpretation (B1)</u>		
37	Clause 1.1 - Definitions F:..... V:..... T:.....	Item	
38	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item	
	<u>Documents (B2)</u>		
39	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item	
40	Clause 2.2 - Provisional bills of quantities Multiple procurement These bills of quantities are in multiple procurement format ie the "wet trades" - earthworks, concrete, formwork and reinforcement, precast concrete, masonry, waterproofing and sub-surface drainage - are provisionally measured and the subsequent trades are budgetary allowances and/or provisional sums. F:..... V:..... T:.....	Item	
41	Clause 2.3 - Availability of construction information F:..... V:..... T:.....	Item	
	Carried Forward	R	
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		Brought Forward	R	
42	<p>Clause 2.4 - Ordering of materials and goods</p> <p>F:..... V:..... T:.....</p> <p><u>Previous work and adjoining properties (B3)</u></p>		Item	
43	<p>Clause 3.1 - Previous work - dimensional accuracy</p> <p>F:..... V:..... T:.....</p>		Item	
44	<p>Clause 3.2 - Previous work - defects</p> <p>F:..... V:..... T:.....</p>		Item	
45	<p>Clause 3.3 - Inspection of adjoining properties</p> <p>F:..... V:..... T:.....</p> <p><u>The site (B4)</u></p>		Item	
46	<p>Clause 4.1 - Handover of site in stages</p> <p>F:..... V:..... T:.....</p>		Item	
47	<p>Clause 4.2 - Enclosure of the works</p> <p>F:..... V:..... T:.....</p>		Item	
48	<p>Clause 4.3 - Geotechnical and other investigations</p> <p>F:..... V:..... T:.....</p>		Item	
49	<p>Clause 4.4 - Encroachments</p> <p>F:..... V:..... T:.....</p>		Item	
50	<p>Clause 4.5 - Existing premises occupied</p> <p>F:..... V:..... T:.....</p>		Item	
51	<p>Clause 4.6 - Services - known</p> <p>F:..... V:..... T:.....</p> <p><u>Management of contract (B5)</u></p>		Item	
52	<p>Clause 5.1 - Management of the works</p> <p>F:..... V:..... T:.....</p>		Item	
		Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>			

		Brought Forward	R	
53	Clause 5.2 - Progress meetings F:..... V:..... T:.....		Item	
54	Clause 5.3 - Technical meetings F:..... V:..... T:.....		Item	
	<u>Samples, shop drawings and manufacturer's instructions (B6)</u>			
55	Clause 6.1 - Samples of materials F:..... V:..... T:.....		Item	
56	Clause 6.2 - Workmanship samples F:..... V:..... T:.....		Item	
57	Clause 6.3 - Shop drawings F:..... V:..... T:.....		Item	
58	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....		Item	
	<u>Deposits and fees (B7)</u>			
59	Clause 7.1 - Deposits and fees F:..... V:..... T:.....		Item	
	<u>Temporary services (B8)</u>			
60	Clause 8.1 - Water F:..... V:..... T:.....		Item	
61	Clause 8.2 - Electricity F:..... V:..... T:.....		Item	
62	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....		Item	
63	Clause 8.4 - Communication facilities F:..... V:..... T:.....		Item	
		Carried Forward	R	
	Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries			

		Brought Forward	R
	<u>Prime cost amounts (B9)</u>		
64	<p>Clause 9.1 - Responsibility for prime cost amounts</p> <p><i>Where details of materials for which prime cost amounts are to be allowed <u>are</u> readily available, the quantity surveyor may elect to insert the relevant prime cost amounts in measured items, which measured items shall contain sufficient detail for the contractor to price for fixing and installation, waste, etc</i></p> <p>F:..... V:..... T:.....</p>	Item	
	<u>Attendance on subcontractors (B10)</u>		
65	<p>Clause 10.1 - General attendance</p> <p><i>General attendance is defined as being the duties of the contractor in terms of clause 12.2 of the JBCC n/s subcontract agreement</i></p> <p>F:..... V:..... T:.....</p>	Item	
66	<p>Clause 10.2 - Special attendance</p> <p>F:..... V:..... T:.....</p>	Item	
	<u>General (B11)</u>		
67	<p>Clause 11.1 - Protection of the works</p> <p>F:..... V:..... T:.....</p>	Item	
68	<p>Clause 11.2 - Protection/isolation of existing works and works occupied in sections</p> <p>F:..... V:..... T:.....</p>	Item	
69	<p>Clause 11.3 - Security of the works</p> <p>F:..... V:..... T:.....</p>	Item	
70	<p>Clause 11.4 - Notice before covering work</p> <p>F:..... V:..... T:.....</p>	Item	
71	<p>Clause 11.5 - Disturbance</p>		
		Carried Forward	R
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

		Brought Forward	R
	<p>Disturbance</p> <p>All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever.</p> <p>F:..... V:..... T:.....</p>		Item
72	<p>Clause 11.6 - Environmental disturbance</p> <p>Controlling all forms of pollution</p> <p>The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc</p> <p>The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works.</p> <p>F:..... V:..... T:.....</p>		Item
73	<p>Clause 11.7 - Works cleaning and clearing</p> <p>F:..... V:..... T:.....</p>		Item
74	<p>Clause 11.8 - Vermin</p> <p>F:..... V:..... T:.....</p>		Item
75	<p>Clause 11.9 - Overhand work</p> <p>F:..... V:..... T:.....</p>		Item
76	<p>Clause 11.10 - Tenant installations</p> <p>F:..... V:..... T:.....</p>		Item
77	<p>Clause 11.11 - Advertising</p> <p>F:..... V:..... T:.....</p>		Item
		Carried Forward	R
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

		Brought Forward	R	
<u>SECTION C: SPECIFIC PRELIMINARIES</u>				
78	<p>Warranties for materials and workmanship</p> <p>Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the entity supplying the materials and/or executing the work and shall deliver same to the principal agent on final completion of the contract</p> <p>The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so</p> <p>The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F:..... V:..... T:.....</p>	Item		
79	<p>Overtime</p> <p>Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>F:..... V:..... T:.....</p>	Item		
80	<p>Cooperation of the contractor for cost management</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget</p> <p>F:..... V:..... T:.....</p>	Item		
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

		Brought Forward	R	
81	<p>Overloading</p> <p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense</p> <p>F:..... V:..... T:.....</p>		Item	
82	<p>Propping of floors below</p> <p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor</p> <p>F:..... V:..... T:.....</p>		Item	
83	<p>Testing of flat roof waterproofing for watertightness</p> <p>Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing</p> <p>F:..... V:..... T:.....</p>		Item	
84	<p>Site instructions</p> <p>Instructions issued on site are to be recorded in a triplicate site instruction book which is to be maintained on site by the contractor</p> <p>F:..... V:..... T:.....</p>		Item	
85	<p>Non-Cession of Monies</p> <p>The Contractor shall not cede or assign his right or claims to any monies due to or to become due under this Contract</p> <p>F:..... V:..... T:.....</p>		Item	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

		Brought Forward	R	
86	<p>Drawings on Site</p> <p>The Contractor shall maintain on Site at all times, a complete set of the latest revisions of the working drawings issued by the Architect, the Engineer, and the Electrical Consultant</p> <p>F:..... V:.....T:.....</p>		Item	
87	<p>Labour Record</p> <p>At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day</p> <p>F:..... V:.....T:.....</p>		Item	
88	<p>Plant Record</p> <p>At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used for the works.</p> <p>F:..... V:.....T:.....</p>		Item	
89	<p>Scaffolding</p> <p>No scaffolding is measured as these Bills of Quantities are based on the Sixth edition of the Standard System for Measuring Building Work. However, the Tenderer is advised to study the drawings as scaffolding shall be required in certain areas for use by himself and selected/nominated subcontractors and the contractor must establish or otherwise required by him or selected/nominated subcontractor including taking down and reerecting as may be necessary and no claims whatsoever will be entertained</p> <p>F:..... V:.....T:.....</p>		N/A	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

90	<p style="text-align: right;">Brought Forward</p> <p>Daywork</p> <p>Where in the opinion of the Principal Agent any extra work cannot properly be measured or valued, the Contractor will be allowed daywork prices therefore calculated upon the costs defined hereunder together with the stated percentages. The total thus arrived at shall be the total amount recoverable by the Contractor for performing such work</p> <ol style="list-style-type: none"> The costs to the Contractor or sub-contractor of materials, being the net cost (at current market prices) actually paid for such materials after the deduction of cash discounts or if materials are supplied from the Contractor's or sub-contractor's stock then the cost of such materials shall be based upon the current market price plus the cost of delivery to Site; to which net cost 7,5% thereof shall be added. The cost of labour to the Contractor or sub contractor, being all items of direct cost of labour actually remunerated to the workmen concerned which shall include the cost of all allowances in terms of the industrial Conciliation Act (where applicable) or any other wage determination applying in the area where the daywork is executed: to which labour cost 7,5% shall be added. <p>Hourly base rates for labour shall be the current market rates for labour based upon standard working hours and shall be applied in respect of the time spent by workers directly engaged on the particular day works including any operators mechanical plant and transport and erecting and dismantling other plant. If a claim is made that individual workmen have been paid wages and allowances in excess of the minimum legalised rates, then proof must be furnished that such workmen had been so paid prior to the commencement of the daywork referred to.</p> <ol style="list-style-type: none"> The rate for mechanical plant shall be commercial hire rates current at the time of executing the daywork and shall include fuel and insurance costs. <p>The above percentages shall cover head office charges; Site staff including Site supervision; third party and Contractors workmen compensation and unemployment insurance fund contributions; use, repair and sharpening of non-mechanical hand tools; use of erected scaffolding, staging, trestles and the like; use of tarpaulins, protective clothing, artificial lighting, safety and welfare facilities, storage and the like as may be available on site; and profit.</p> <p>Supporting vouchers reflecting the time spent and materials used in each week shall be delivered for verification to the Principal Agent not later than twenty calendar days after the end of the week concerned. Should the Contractor fail to submit the vouchers within this time, the Principal Agent shall determine a fair price for the work.</p> <p>F:..... V:..... T:.....</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p>91</p>	<p style="text-align: right;">Brought Forward</p> <p>Clause 6.3: Shop Drawings</p> <p>The term 'Shop Drawings' shall mean drawings, layout drawings, illustrations, schedules, performance charts, brochures, operating manuals, other data which are prepared by the Contractor or Sub-contractor, Manufacturer, Supplier or Distributor and which illustrate some portion of the work.</p> <p>The Contractor shall ensure that all shop drawings required for the work in terms of this Contract, all selected/nominated Sub-contracts and/or Architect's instructions, are prepared and submitted timeously in accordance with the following procedure:</p> <ol style="list-style-type: none"> 1. Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Architect for approval. Such work shall not be carried out until such approval has been given. 2. Shop drawings shall be submitted to the Architect for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme. 3. All submissions shall be prepared in accordance with the Contract Drawings and specifications and/or any Architect's instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason of such deviation, together with any cost and/or time implication <p>Delays in approval of shop drawings due to non compliance with drawings, specifications and/or Architect's instructions shall not constitute grounds for any delay claims</p> <p>F:..... V:.....T:.....</p>	<p>R</p>	
<p>92</p>	<p>Location of Temporary Building and Temporary Services</p> <p>The Contractor shall provide all necessary temporary works, including temporary roads, tracks, crossings, hardstanding, and services, etc., required for his own Sub-contractors use during the construction and maintenance period.</p> <p>There is no guarantee given or implied that site conditions will be such that the Contractor will be able to erect such offices, stores and temporary accommodation within the site boundaries and it shall be the Contractors responsibility to adopt whatever measures he deems necessary in this regard and to obtain all necessary permission and pay all costs in connection therewith</p> <p>F:..... V:.....T:.....</p>	<p>Item</p>	
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	<p>R</p>	

		Brought Forward	R	
93	<p>Removal and Making Good of Temporary Works, etc on Completion</p> <p>The Contractor shall remove all temporary works, roads, services and the like used for this contract and shall make good to the entire satisfaction of the Architect any damages resulting therefrom</p> <p>F:..... V:.....T:.....</p>		Item	
94	<p>Indemnities</p> <p>Indemnities shall be sought by the Architect from all Contractors and Sub-contractors undertaking any design responsibility</p> <p>F:..... V:.....T:.....</p>		Item	
95	<p>Transformation and Empowerment Requirements</p> <p>The contractor shall take all necessary measures to comply with the Clause 3.3 of the returnable document (Small Contractor Development, Participation and Advancement of Start-Up, Small and Micro Enterprises) and make adequate provision to accommodate the requirements relating to job creation, job intensity, training and development, local SMME utilisation, local material utilisation, enterprise development, etc. as detailed in the returnable document</p> <p>F:..... V:.....T:.....</p>		Item	
96	<p>Health and safety</p>			
97	<p>Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to CONSTRUCTION HEALTH AND SAFETY SPECIFICATION NORTHERN FARM) and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]</p>			
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

	Brought Forward	R	
	<p>For compliance with Occupational health and Safety Act 1993 as amended, The contractor shall:</p> <ol style="list-style-type: none"> 1. Comply with the health and safety specification for the works that will include provision for COVID-19 Regulations. 2. Prepare and agree with the health and safety consultant the health and safety plan for the works 3. Cooperate with the health and safety consultant in all respects 4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification 5. Conform to the conditions contained in the employer's health and safety specification <p>F:..... V:..... T:.....</p>	Item	
98	Green star building certification		
	F:..... V:..... T:.....	N/A	
99	Broad based black economic empowerment (BBBEE)		
	Tenders submitted will be evaluated taking into account their empowerment rating		
	The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works		
	The contractor is to submit to the principal agent on an annual basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating		
	F:..... V:..... T:.....	Item	
100	Advertising rights		
	The employer may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The contractor shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting his obligations under this agreement		
	F:..... V:..... T:.....	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

		Brought Forward	R	
101	<p>Confidentiality</p> <p>The contractor undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all subcontractors and suppliers. Such information shall not be used in any way except in connection with the execution of the works</p> <p>No information regarding this project shall be published or disclosed without the prior written consent of the employer</p> <p>F:..... V:..... T:.....</p>		Item	
102	<p>Media releases</p> <p>All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the employer</p> <p>The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement connected with this project to be printed, screened or aired by the media</p> <p>F:..... V:..... T:.....</p> <p><u>NOTE:</u></p> <p>The information listed below is in respect of certain clauses in the Preliminaries, requiring the supplementary information</p>		Item	
103	<p>CLAUSE NO A24 - 3 months including public holidays and statutory builders holidays</p> <p>F:..... V:..... T:.....</p> <p>The date for site handover :- TO BE ANNOUNCED</p> <p>The contractual practical completion date is : 3 months after the date of site handover</p> <p>CLAUSE NO A1 - Clause A1 has been amended to read that construction period means the period commencing on the date on which possession of the site is given to the contractor</p>		Item	
104	<p>CLAUSE NO 24 - Amount of penalty shall be R4000 per calender day.</p> <p>F:..... V:..... T:.....</p>		Item	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 1 BOREHOLE DRILLING, EQUIPPING & WATER SUPPLY (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>NOTE:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p>				
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 1 Water supplies</p>		R		

	<p style="text-align: center;">Brought Forward</p> <p><u>Laying, backfilling, bedding, etc of pipes</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturer's instructions</p> <p>Where no manufacturer's instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200</p> <p>L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage</p> <p>Pipe trenches, etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches)</p> <p>Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB: Bedding (Pipes)</p> <p>Unless otherwise described bedding of rigid pipes shall be class C bedding</p> <p><u>Borehole drilling</u></p> <p>The contractor is advised to study the Geohydrologist report that is appended to these Bills of quantities with regard to the proposed position of boreholes, drilling method, etc</p> <p><u>BOREHOLE DRILLING</u></p> <p><u>Drilling, Equipping & Testing of Boreholes</u></p> <p>1 Drilling, equipping and testing of 1 x Borehole to a maximum of 100m depth complete and ready for use including connecting water borehole water supply to existing reservoir . The borehole drilling shall meet the following requirements:</p> <ul style="list-style-type: none"> · ·Drilling of borehole minimum 165 diameter, maximum depth of 100m but only paid per metre drilled (worked). · ·casing-maximum of 50 metre casing depth, paid per metre, the casing outside diameter and thickness of 177mm x 4mm · yield test , minimum 6 hour yield test · ·water quality test- according to SANS <p style="text-align: center;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 1 Water supplies</p>		R	
				R

	Brought Forward		R	
	<p>241:2018, test report to indicate if fit for irrigation and human consumption</p> <p>The drilling and equipping of borehole should conform to the recommendations provided in the Geohydrologist report appended to these bills of quantities</p> <ul style="list-style-type: none"> · The exploration drilling of the borehole at Northern zone should be conducted <u>using down the hole rotary air percussion equipment</u> and the work be carried out in accordance but not limited to the Department of Water and Sanitation (DWS) minimum standards and guidelines; · The boreholes drilling should be supervised by a competent hydrogeologist and geological/lithological information and hydraulic information such as water strikes information be recorded; · Successful boreholes drilled should be subjected to pumping tests to determine the safe and sustainable groundwater yields. This should be done according to scientifically acceptable standards; and · It is of great importance to submit the samples of groundwater to an accredited laboratory for hydrochemical analysis to determine if the water is suitable for human consumption. 	m	100	
	<u>BUDGETARY ALLOWANCES</u>			
	<u>The following budgetary allowances are for work to be carried out by the Main Contractor and remeasured on completion. For payment purposes all scheduled items with rates in the Bills of Quantities will be applicable and take preference over any negotiated rates if not available and so required</u>			
2	Allow a budgetary allowance of R40,000.00 (Forty Thousand Rand) for water connection works works as directed by the Principal Agent and measured and valued at schedule rates and omitted if not so used	Item		40 000.00
	Carried to Final Summary		R	
	Section No. 2 Section 2 - External Works Bill No. 1 Water supplies			

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO. 1 PROVISIONAL SUMS</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>All prime cost amounts and provisional sums are net and include for delivery to site of all articles concerned</p> <p>Unless a specific percentage mark up for attendance is indicated in the rate column, the amounts priced by the contractor for attendance against each Provisional Sum shall be deemed to be Lump Sum and shall not be adjusted unless the scope of the sub-contract varies significantly.</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 3 Section 3 - Provisional Sums Bill No. 1 Provisional sums</p>				
			R		

Brought Forward		R
<p><u>Attendance upon sub-contractors</u></p> <p>The item "Allow for attendance" following each provisional sum is for costs incurred by the Contractor in providing free of charge to the Sub-contractor the following :</p> <ol style="list-style-type: none"> 1. Services as set out in clause B10 of the preliminaries 2. Hoisting of Selected Sub-contractor's material where required 3. Casing and protection of the Selected Sub-contractor's work after completion thereof 4. Making good in all trades and final cleaning down on completion only 5. Every facility to enable the Selected Sub-contractor to carry out his work in a workmanlike manner in proper order and sequence 6. Reasonable site security measures 7. Programming and co-ordination of the works including obtaining all necessary particulars of Selected Sub-contractor's work timeously <p>Loss of profit: Should any of the specialist items listed in this Bill be substantially reduced or omitted, no claim for "loss of profit" on any of the specialists listed, will be considered</p> <p><u>ALLOW THE FOLLOWING NET PROVISIONAL SUMS</u></p> <p><u>FURNITURE</u></p> <ol style="list-style-type: none"> 1 Provide the sum of R750 000.00 (Seven Hundred and Fifty Thousand Rand) for Farm Furniture to be executed by a selected sub contractor to be appointed by the Principal Agent. 2 Profit on above item. 3 Attendance on ditto. 		
	Item	750 000.00
	Item	
	Item	
Carried to Final Summary		R
<p>Section No. 3 Section 3 - Provisional Sums Bill No. 1 Provisional sums</p>		

Section No	<u>FINAL SUMMARY</u>	Page No		Amount
1	Section 1- Preliminaries and General	131		
2	Section 2 - External Works	134		
3	Section 3 - Provisional Sums	136		
	Sub Total		R	
	ELECTRICAL INSTALLATION			
	Add : Sub-Total (Excluding VAT) for Electrical Installation from Electrical Bills of Quantities	Item		
	Sub Total		R	
	<u>CONTINGENCIES</u>			
	Allow the sum of R100 000.00 (One Hundred Thousand Rand) for Contingencies to be used or deducted in full at the approval of the client		R	100 000.00
	ADD Value Added Tax (15%)		R	
	Carried to Combined Projects Final Summary		R	

SERVICES INSTALLATIONS (ELECTRICAL & MECHANICAL) NORTHERN FARM

BILLS OF QUANTITIES (Independently numbered)

NORTHEN FARMS

ELECTRICAL & MECHANICAL SERVICES BOQ

CONTENTS

ELECTRICAL BOQ

NORTHEN FARMS

ELECTRICAL INSTALLATION BILL OF QUANTITIES

BILL No. 1: ELECTRICAL INSTALLATION					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				R	R
1.1	LV DISTRIBUTION CABLES				
	Supply and installation of 600/1000V PVC/SWA/PVC/PVC copper cables installed in ground, ducts, cable trays, and voids				
1.1.1	95mm ² x 4 core copper cable	m	40		
1.1.2	50mm ² bare copper earth wire (BCEW)	m	40		
1.1.3	10mm ² x 4 core copper cable (Borehole 1)	m	260		
1.1.4	6mm ² bare copper earth wire (BCEW)	m	200		
1.1.5	10mm ² x 4 core copper cable (Borehole 2)	m	260		
1.1.6	6mm ² bare copper earth wire (BCEW)	m	200		
1.2	CABLE TERMINATIONS				
	Supply and installation of 600/1000V PVC/SWA/PVC/PVC cable terminations complete with lugs and earthings as and specified				
1.2.1	95mm ² x 4 core copper cable	no.	2		
1.2.2	50mm ² bare copper earth wire (BCEW)	no.	2		
1.2.3	10mm ² x 4 core copper cable (Borehole 1)	no.	2		
1.2.4	6mm ² bare copper earth wire (BCEW)	no.	2		
1.2.5	10mm ² x 4 core copper cable (Borehole 2)	no.	2		
1.2.6	6mm ² bare copper earth wire (BCEW)	no.	2		
1.3	ELECTRICITY CONNECTION - NEW TRANSFORMER				
1.3.1	New Pole Mounted Transformer By Eskom - 100kVA, 400V	sum	1	308 000.00	R 308 000.00
1.3.2	Profit and attendance on item 1.3.1 above	%	___%		
1.3.3	Temporary electrical connection	sum	1		
	CARRIED FORWARD				

BILL No. 1: ELECTRICAL INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				R	R
	BROUGHT FORWARD				
1.4	MANHOLES AND CABLE SLEEVES				
	Supply and install cable sleeves and manholes as indicated drawings				
1.4.1	110mmØ KabelFlex HDPE sleeves.	m	12		
1.4.2	50mmØ KabelFlex HDPE sleeves.	m	1		Rate only
1.4.3	50mmØ KabelFlex HDPE slow bend	no.	1		Rate Only
1.4.4	100mmØ KabelFlex HDPE slow bend	no.	2		
1.5	TRENCHING AND BACK FILLING				
	All prices below includes the excavation of trenches and separating of stones and soil, rocks etc, levelling of trench beds, refill compacting and reparation of all surfaces to the original finish (600mm deep x 300mm wide)				
1.5.1	Excavating in Earth	m3	79		
1.5.2	Excavating in Soft Rock	m3	8		
1.5.3	Excavating in Hard Rock	m3	2		
1.6	CABLE MARKERS AND DANGER WARNING TAPE				
	Supply and installation of cable markers and danger warning tape as specified				
1.6.1	Low voltage concrete cable route markers	no.	18		
1.6.2	Low voltage danger warning tape	m	440		
1.7	TESTING AND COMISSIONING				
1.7.1	Testing and comissioning of the entire low voltage network area lighting including the provision of all test equipment and issuing of a certificate of compliance for the installation.	sum	1		
1.7.2	Provide as built drawings for the whole electrical installation to the engineer	set	3		
1.8	CIRCUIT BREAKERS				
1.8.1	Supply and install 3 Pole, 15A, 5kA in existing DBs	no.	2		
	TOTAL CARRIED FORWARD TO SUMMARY				

SUMMARY

NORTHERN FARMS

ELECTRICAL INSTALLATION BILL OF QUANTITIES

1 Bill no. 1: Electrical Installation

**TOTAL CARRIED TO NORTHERN FARM BUILDERS WORK
BILLS OF QUANTITIES FINAL SUMMARY (EX VAT)**

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**ELECTRICAL
INSTALLATION SPECIFICATION
FOR
NORTHEN FARMS**

APRIL 2021

INDEX

NOTICE TO TENDERERS

SPECIFICATION FOR ELECTRICAL WORK

PART 1 - GENERAL

PART 2: INSTALLATION DETAILS

NOTICE TO TENDERERS

1. The tenderer for the principal contract shall submit additional information regarding the installer of the Electrical Installation together with the returnables enclosed with the tender enquiry documents.

SPECIFICATION FOR ELECTRICAL WORKS

PART 1 - GENERAL

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PART 1 - GENERAL

1 TESTS

After completion of the works and before first delivery is taken, a full test will be carried out on the installation for a period of sufficient duration to determine the satisfactory working thereof. During this period the installations will be inspected, and the Contractor shall make good, to the satisfaction of the Representative/Agent, any defects which may arise.

The Contractor shall provide all instruments and equipment required for testing and any water, power and fuel required for the commissioning and testing of the installations at completion.

2 MAINTENANCE OF INSTALLATIONS

With effect from the date of the First Delivery Certificate the Contractor shall at his own expense undertake the regular servicing of the installation during the defects liability period and shall make all adjustments necessary for the correct operation thereof.

If during the said period the installations is not in working order for any reason for which the Contractor is responsible, or if the installations develops defects, he shall immediately upon being notified thereof take steps to remedy the defects and make any necessary adjustments.

Should such stoppages however be so frequent as to become troublesome, or should the installations otherwise prove unsatisfactory during the said period the Contractor shall, if called upon by the Representative/Agent or the Director-General, at his own expense replace the whole of the installations or such parts thereof as the Representative/Agent or the Director-General may deem necessary with apparatus specified by the Representative/Agent or the Director-General.

3 REGULATIONS

The installation shall be erected and tested in accordance with the SANS Regulations.

4 NOTICES AND FEES

The Contractor shall give all notices required by and pay all necessary fees, including any inspection fees, which may be due to the local Supply Authority.

On production of the official account, only the net amount of the fee charged by the Supply Authority for connection of the installation to the supply mains will be refunded to the Contractor by the Client.

5 SCHEDULE OF FITTINGS

In all instances where schedule of light, socket outlet and power points are attached to or included on the drawings, these schedules are to be regarded as forming part of the specification.

6 QUALITY OF MATERIALS

Only materials of first-class quality shall be used and all materials shall be subject to the approval of the Principal Agent/Client.

Wherever applicable the material is to comply with the relevant SANS standards, specifications, or to British Standard Specifications, where no SABS Specifications exist.

Materials wherever possible, must be of South African manufacture.

7 CONDUIT AND ACCESSORIES

The type of conduit and accessories required for the service, i.e. whether the conduit and accessories shall be of the screwed type, plain-end type or of the non-metallic type and whether metallic conduit shall be galvanised, is specified in Part 2 of this specification.

Unless other methods of installation are specified for certain circuits, the installation shall be in conduit throughout. No open wiring in roof spaces or elsewhere will be permitted.

The conduit and conduit accessories shall comply fully with the applicable SABS specifications as set out below and the conduit shall bear the mark of approval of the South African Bureau of Standards.

- a) Screwed metallic conduit and accessories: SANS 1065, parts 1 and 2.
- b) Plain-end metallic conduit and accessories: SANS 1065, parts 1 and 2.
- c) Non-metallic conduit and accessories: SANS 950

All conduit fittings except couplings, shall be of the inspection type. Where cast metal conduit accessories are used, these shall be of malleable iron. Zinc base fittings will not be allowed.

Bushes used for metallic conduit shall be brass and shall be provided in addition to locknuts at all points where the conduit terminates at switchboards, switchboxes, draw-boxes, etc.

Draw-boxes are to be provided in accordance with the "Wiring Code" and wherever necessary to facilitate easy wiring.

For light and socket outlet circuits, the conduit used shall have an external diameter of 20mm. In all other instances the sizes of conduit shall be in accordance with the "Wiring Code" for the specified number and size of conductors, unless otherwise directed in part 2 of this specification or indicated on the drawings.

Only one manufactured type of conduit and conduit accessories will be permitted throughout the installation.

Running joints in screwed conduit are to be avoided as far as possible and all conduit systems shall be set or bent to the required angles. The use of normal bends must be kept to a minimum with exception of larger diameter conduits where the use of such bends is essential.

All metallic conduits shall be manufactured of mild steel with a minimum thickness of 1,2mm for plain-end conduit and 1,6mm in respect of screwed conduit.

Under no circumstances will conduit having a wall thickness of less than 1,6mm be allowed in screeding laid on top of concrete slabs.

Bending and setting of conduit must be done with special bending apparatus manufactured for the purpose and which are obtainable from the manufacturers of the conduit systems. Damage to conduit resulting from the use of incorrect bending apparatus or methods applied must on indication by the Client's inspectorate staff, be completely removed and rectified and any wiring already drawn into such damaged conduits must be completely renewed at the Contractor's expense.

Conduit and conduit accessories used for flame-proof or explosion proof installations and for the suspension of luminaires as well as all load bearing conduit shall in all instances be of the metallic screwed type.

Tenderers must ensure that general approval of the proposed conduit system to be used is obtained from the local electricity supply authority prior to the submission of their tender. Under no circumstances will consideration be given by the Client to any claim submitted by the Contractor, which may result from a lack of knowledge in regard to the supply authority's requirements.

8 CONDUIT IN ROOF SPACES

Conduit in roof spaces shall be installed parallel or at right angles to the roof members and shall be secured at intervals not exceeding 1,5m by means of saddles screwed to the roof timbers.

Nail or crampets will not be allowed.

Where non-metallic conduit has been specified for a particular service, the conduit shall be supported and fixed with saddles with a maximum spacing of 450 mm. The Contractor shall supply and install all additional supporting timbers in the roof space as required.

Under flat roofs, in false ceilings or where there is less than 0,9m of clearance, or should the ceilings be insulated with glass wool or other insulating material, the conduit shall be installed in such a manner as to allow for all wiring to be executed from below the ceilings.

Conduit runs from distribution boards shall, where possible terminate in fabricated sheet steel draw-boxes installed directly above or in close proximity to the boards.

9 SURFACE MOUNTED CONDUIT

Wherever possible, the conduit installation is to be concealed in the building work; however, where unavoidable or otherwise specified under Part 2 of the specification, conduit installed on the surface must be plumbed or levelled and only straight lengths shall be used.

The use of inspection bends is to be avoided and instead the conduit shall be set

uniformly, and inspection coupling used where necessary.

No threads will be permitted to show when the conduit installation is complete, except where running couplings have been employed.

Running couplings are only to be used where unavoidable and shall be fitted with a sliced couplings as a lock nut.

Conduit is to be run on approved spaced saddles rigidly secured to the walls.

Alternatively, fittings, tees, boxes, couplings etc., are to be cut into the surface to allow the conduit to fit flush against the surface. Conduit is to be bedded into any wall irregularities to avoid gaps between the surface and the conduit.

Crossing of conduits is to be avoided, however, should it be necessary purpose-made metal boxes are to be provided at the junction. The finish of the boxes and positioning shall be in keeping with the general layout.

Where several conduits are installed side by side, they shall be evenly spaced and grouped under one purpose-made saddle.

Distribution boards, draw-boxes, industrial switches, and socket outlets etc., shall be neatly recessed into the surface to avoid double sets.

In situations where there are no ceilings the conduits are to be run along the wall plates and the beams.

Painting of surface conduit shall match the colour of the adjacent wall finishes.

Only approved plugging materials such as aluminium inserts, fibre plugs, plastic plugs, etc., and round-head screws shall be used for fixing saddles, switches, socket outlets, etc., to walls, wood plugs and the plugging in joints in brick walls are not acceptable.

10 CONDUIT IN CONCRETE SLABS

In order not to delay building operations the Contractor must ensure that all conduits and other electrical equipment which are to be cast in the concrete columns and slabs are installed in good time.

The Contractor shall have a representative in attendance at all times when the casting of concrete takes place.

Draw-boxes, expansion joint boxes and round conduit boxes are to be provided where necessary. Sharp bends of any nature will not be allowed in concrete slabs.

Draw and/or inspection boxes shall be grouped under one common cover plate and must preferable be installed in passages or male toilets.

All boxes, etc., are to be securely fixed to the shuttering to prevent displacement when concrete is cast. The conduit shall be supported and secured at regular intervals and

installed as close as possible to the neutral axis of concrete slabs and/or beams.

Before any concrete slabs are cast, all conduit droppers to switchboards shall be neatly spaced and rigidly fixed.

11 FLEXIBLE CONNECTIONS FOR STOVES & MACHINES

Flexible tubing connections shall be of galvanised steel construction, and in damp situations of the plastic sheathed galvanised steel type. Other types may only be used subject to the prior approval of the Client's site electrical representative.

Connectors for coupling onto the flexible tubing shall be of the gland or screw-in types, manufactured of either brass or cadmium or zinc plated mild steel, and the connectors after having been fixed onto the tubing, shall be durable and mechanically sound.

Aluminium and zinc alloy connectors will not be acceptable.

12 WIRING

Except where otherwise specified in Part 2 of this specification, wiring shall be carried out in conduit throughout. Only one circuit per conduit will be permitted.

No wiring shall be drawn into conduit until the conduit installation has been completed and all conduit ends provided with bushes. All conduits to be clear of moisture and debris before wiring is commenced.

Unless otherwise specified in Part 2 of this specification or indicated on the service drawings, the wiring of the installation shall be carried out in accordance with the "Wiring Code". Further to the requirements concerning the installation of earth conductors to certain light points as set out in the "Wiring Code", it is a specific requirement of this document that where plain-end metallic conduit or non-metallic conduit has been used, earth conductors must be provided and drawn into the conduit with the main conductors to all points, including all luminaires and switches throughout the installation.

Wiring for lighting circuits is to be carried out with 2,5mm² conductors and a 2,5mm²-earth conductor. For socket outlet circuits the wiring shall comprise 4mm² conductors and a 2,5mm²-earth conductor. In certain instances, as will be directed in Part 2 of this specification, the sizes of the aforementioned conductors may be increased for specified circuits. Sizes of conductors to be drawn into conduit in all other instances, such as feeders to distribution boards, power points etc., shall be as specified elsewhere in this specification or indicated on the drawings. Sizes of conductors not specified must be determined in accordance with the "Wiring Code".

The loop-in system shall be followed throughout, and no joints of any description will be permitted.

The wiring shall be done in PVC insulated 600/1000 V grade cable to SANS 1507.

Where cable ends connect onto switches, luminaires etc., the end strands must be neatly and tightly twisted together and firmly secured. Cutting away of wire strands of any cable will not be allowed.

13 SWITCHES AND SOCKET OUTLETS

All light switches shall be installed at 1,2m above finished floor level and all socket outlets as directed in the Schedule of Fittings which forms part of this specification or alternatively the height of socket outlets may be indicated on the drawings.

14 SWITCHGEAR

Switchgear, which includes circuit breakers, iron-clad switches, interlocked switch-socket outlet units, contactors, time switches, etc., shall be equal and similar in quality to such brands as may be specified.

For uniform appearance of switchboards, only one approved make of each of the different classes of switchgear mentioned in the Quality Specifications shall be used throughout the installations.

15 SWITCHBOARDS/DISTRIBUTION BOARDS

All boards shall be in accordance with the single line drawings. Shop drawings must be approved by the Engineer/Client before manufacturing of distribution boards.

In all instances where provision is to be made on boards for the supply authority's main switch and/or metering equipment the contractor must ensure that all requirements of the authorities concerned in this respect are met.

All outdoor distribution boards shall be weather and vermin proof and shall be mounted on a plinth and have brick work around it except in front of the doors. All outdoor distribution boards shall be made from CR12 metal.

Any construction or standard type aboard proposed, as an alternative to that specified must have the prior approval of the Client.

All busbars, wiring, terminals, etc., are to be adequately insulated and all wiring is to enter the switchgear from the back of the board. The switchgear shall be mounted within the boards to give a flush front panel. Cable and boxes and other ancillary equipment must be provided where required.

Clearly engraved labels are to be mounted on or below every switch. The working of the labels in English and Afrikaans, is to be according to the lay-out drawings or as directed by the Client's representative and must be confirmed on site. Flush mounted boards to be installed with the top of the board not more than 2,0m above the finished floor level.

16 WORKMANSHIP AND STAFF

Except in the case of electrical installations supplied by a single-phase or three-phase electricity supply at the point of supply, an accredited person shall exercise general control over all electrical installation work being carried out.

The workmanship shall be of the highest grade and to the satisfaction of the Client.

All inferior work shall, on indication by the Client's inspecting officers, immediately be removed and rectified by and at the expense of the Contractor.

17 CERTIFICATE OF COMPLIANCE

On completion of the service, a **certificate of compliance** must be issued to the Client's Representative/Agent in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

18 EARTHING OF INSTALLATION

Main earthing

The type of main earthing must be as required by the supply authority if other than the Clients, and in any event as directed by the Client's representative, who may require additional earthing to meet test standards.

Where required an earth mat shall be provided, the minimum size, unless otherwise specified, being 1,0m x 1,0m and consisting of 4mm diameter hard-drawn bare copper wires at 250mm centres, brazed at all intersections.

Alternatively, or additionally earth rods or trench earths may be required as specified or directed by the Client's authorised representative.

Installations shall be effectively earthed in accordance with the "Wiring Code" and to the requirements of the supply authority. All earth conductors shall be stranded copper with or without green PVC installation.

Connection from the main earth bar on the main board must be made to the cold water main, the incoming service earth conductor, if any and the earth mat or other local electrode by means of 12mm x 1,60 mm solid copper strapping or 16 mm² stranded (not solid) bare copper wire or such conductor as the Client's representative may direct. Main earth copper strapping, where installed below 3m from ground level, must be run in 20 mm diameter conduit securely fixed to the walls.

All other hot and cold-water pipes shall be connected with 12mm x 0,8mm perforated for solid copper strapping (not conductors) to the nearest switchboard. The strapping shall be fixed to the pipework with brass nuts and bolts and against walls with brass screws at 150-mm centres. In all cases where metal water pipes, down pipes, flues, etc., are positioned within 1,6m of switchboards an earth connection consisting of copper strapping shall be installed between the pipework and the board. In vertical building ducts accommodating both metal water pipes and electrical cables, all the pipes shall be earthed at each distribution board.

Roofs, gutters and down pipes

Where service connections consist of overhead conductors, all metal parts of roofs, gutters and down pipes shall be earthed. One bare 10mm² copper conductor shall be installed over the full length of the ceiling void, fixed to the top purlin and connected to the

main earth conductor and each switchboard. The roof and gutters shall be connected at 15m intervals to this conductor by means of 12mm X 0,8mm copper strapping (not conductors) and galvanised bolts and nuts. Self-tapping screws are not acceptable. Where service connections consist of underground supplies, the above requirements are not applicable.

Sub-distribution boards

A separate earth connection shall be supplied between the earth busbar in each sub-distribution board and the earth busbar in the Main Switchboard. These connections shall consist of bare or insulated stranded copper conductors installed along the same routes as the supply cables or in the same conduit as the supply conductors. Alternatively, armoured cables with earth continuity conductors included in the armouring may be utilised where specified or approved.

Sub-circuits

The earth conductors of all sub-circuits shall be connected to the earth busbar in the supply board in accordance with SANS 10142.

Ring Mains

Common earth conductors may be used where various circuits are installed in the same wire way in accordance with SANS 10142. In such instances the sizes of earth conductors shall be equivalent to that of the largest current carrying conductor installed in the wire way, alternatively the size of the conductor shall be as directed by the Engineer. Earth conductors for individual circuits branching from the ring main shall be connected to the common earth conductor with T-ferrules or soldered. The common earth shall not be broken.

Non-metallic Conduit

Where non-metallic conduit is specified or allowed, the installation shall comply with the Client's standard quality specification for "conduit and conduit accessories".

Standard copper earth conductors shall be installed in the conduits and fixed securely to all metal appliances and equipment, including metal switch boxes, socket-outlet boxes, draw-boxes, switchboards, luminaires, etc. The securing of earth conductors by means of self-threading screws will not be permitted.

Flexible Conduit

An earth conductor shall be installed in all non-metal flexible conduits. This earth conductor shall not be installed externally to the flexible conduit but within the conduit with the other conductors. The earth conductor shall be connected to the earth terminals at both ends of the circuit.

Connection

Under no circumstances shall any connection points, bolts, screws, etc., used for earthing be utilised for any other purpose. It will be the responsibility of the Contractor to supply

and fit earth terminals or clamps on equipment and materials that must be earthed where these are not provided.

Unless earth conductors are connected to proper terminals, the end shall be tinned and lugged.

19 MOUNTING AND POSITIONING OF LUMINAIRES

The Contractor is to note that in the case of board and acoustic tile ceilings, i.e. as opposed to concrete slabs, close co-operation with the building contractor is necessary to ensure that as far as possible the luminaires are symmetrically positioned with regard to the ceiling pattern.

The layout of the luminaires as indicated on the drawings must be adhered to as far as possible and must be confirmed with the Client's representative.

Fluorescent luminaires installed against concrete ceilings shall be screwed to the outlet boxes and in addition 2 x 6mm expansion or other approved type fixing bolts are to be provided. The bolts are to be $\frac{3}{4}$ of the length of the luminaires apart.

Fluorescent luminaires to be mounted on board ceilings shall be secured by means of two 40mm x No. 10 round head screws and washers. The luminaires shall also be bonded to the circuit conduit by means of locknuts and brass bushes. The fixing screws are to be placed $\frac{3}{4}$ of the length of the fitting apart.

Earth conductors must be drawn in with the circuit wiring and connected to the earthing terminal of all fluorescent luminaires as well as other luminaires exposed to the weather in accordance with the "Wiring Code".

Incandescent luminaires are to be screwed directly to outlet boxes in concrete slabs. Against board ceilings the luminaires shall be secured to the bracing or joists by means of two 40mm x No. 8 round head screws.

20 MV SWITCHGEAR

Indoor switchgear shall be manufactured and tested in accordance with IEC 62271 and shall have vacuum interrupting chambers.

Single busbar switchgear shall be provided with air insulated busbar chambers. The protection shall be on board as per the relevant GA. Unit rates provided must make provision for all protection and control cabling required

Steel plates shall be provided on the floor in front of each 11kV panel to protect the floor from damage when the breakers are withdrawn.

This Specification covers the basic requirements in respect of 11 kV, 25 kA (with highest system voltage of 12 kV) indoor switchgear integrated with associated indoor control and relay panels for installation at the Switch Station. Switchgear for Indoor installation shall be metal clad, draw-out truck type and fully compartmentalised having 25 kA short time current rating.

The Specification covers the requirements of indoor switchgear with relays & controls. The control and relay panels should be on-board the switchgear. The equipment offered should be ready for integration to remote control facilities (At the Control Centre) such as

remote closing, tripping of every switchgear panel and a repeat annunciation and indication system showing status of the circuit breaker.

The equipment offered shall be complete with all parts necessary for their effective and trouble-free operation. Such parts will be deemed to be within the scope of the supply irrespective of whether they are specifically indicated in the commercial order or not.

The respective drawing along with notes and specification attached hereto form an integral part of this specification for all purposes.

It is not the intent to specify herein complete details of design and construction. The equipment offered shall conform to the relevant standards and be of high quality, sturdy, robust and of good design and workmanship complete in all respects and capable to perform continuous and satisfactory operations in the actual service conditions at site and shall have sufficiently long life in service as per statutory requirements. In actual practice, notwithstanding any anomalies, discrepancies, omissions, in-completeness, etc. in these specifications and attached drawings, the design and constructional aspects, including materials and dimensions, will be subject to good engineering practice in conformity with the required quality of the product, and to such tolerances, allowances and requirements for clearances etc. as are necessary by virtue of various stipulations in that respect in the relevant Standards, IEC standards, I.E. Rules, I.E. Act and other statutory provisions.

The Tenderer/supplier shall bind himself to abide by these considerations to the entire satisfaction of the employer and will be required to adjust such details at no extra cost to the employer over and above the tendered rates and prices.

Tolerances on all the dimensions shall be in accordance with provisions made in the relevant IEC standards and in these specifications. Otherwise the same will be governed by good engineering practice in conformity with required quality of the product.

PART 2: INSTALLATION DETAILS

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PART2: INSTALLATION DETAILS

1 CABLE SLEEVE PIPES

Where cables cross under roadways, other services and where cables enter buildings, the cables shall be installed in high-density polyethylene (HDPE) sleeves.

The ends of all sleeves shall be sealed with a non-hardening watertight compound after the installation of cables. All sleeves intended for future use shall likewise be sealed.

2 NOTICES

The Contractor shall issue all notices and make the necessary arrangements with Supply Authorities, the Postmaster-General, and S.A. Transport Services, Provincial or National Road Authorities and other authorities as may be required with respect to the installation.

3 ELECTRICAL EQUIPMENT

All equipment and fittings supplied must be suitable for the relevant supply voltage and frequency and must be approved by the Client's representative.

4 DRAWINGS

The drawings generally show the scope and extent of the proposed work and shall not be held as showing every minute detail of the work to be executed.

The position of power points, switches and light points that may be influenced by built-in furniture must be established on site, prior to these items being built in.

5 BALANCING OF LOAD

The Contractor is required to balance the load as equally as possible over the multiphase supply.

6 SERVICE CONDITIONS

All plant shall be designed for the climatic conditions appertaining to the service.

7 SWITCHES AND SOCKET OUTLETS

The installation of switches and socket outlets must conform to clause 13 of Part 1 of this specification.

8 LIGHT FITTINGS AND LAMPS

The installation and mounting of luminaires must conform with clause 19 of Part 1 of this specification.

All fittings to be supplied by the Contractor shall have the approval of the Client. All light fittings shall bear the approved mark of the S.A.B.S.

The light fittings must be of the type specified in the Schedule of Light Fittings.

9 EARTHING AND BONDING

The Contractor will be responsible for all earthing and bonding of the building and installation. The earthing and bonding is to be carried out strictly as described in clause 18 of Part 1 of this specification and to the satisfaction of the Client's representative

10 MAINTENANCE OF ELECTRICAL SUPPLY

All interruptions of the electrical supply, that may be necessary for the execution of the work, will be subject to prior arrangement between the Contractor and the user Client and the Client's representative.

11 EXTENT OF WORK

The work covered by this contract comprises the complete electrical installation, in working order, as shown on the drawings and as per this specification, including the supply and installation of all fittings and also the installation of such equipment supplied by the Client.

12 SUPPLY AND CONNECTION

The supply will be at 400/230 Volt 50Hz.

The Contractor will be responsible for the supply and installation of the supply cable from the meter box to the main low-tension distribution board (MDB). The size and length of the cable is listed and measured in the Bills of Quantities.

13 CONDUIT AND WIRING

Conduit and conduit accessories shall be galvanized screwed conduit or galvanized plain end conduit.

All conduits, regardless of the system employed, shall be installed strictly as described in the applicable paragraphs of clauses 4 to 8 of Part 1 of the specification. Wiring of the installation shall be carried out as directed in clause 9 part 1 of this specification.

Where plain end conduit is offered all switches and light fittings must be supplied with a permanent earth terminal for the connection of the earth wire.

Lugs held by switch fixing screws or self-tapping screws will not be acceptable.

14 CABLES

The Contractor shall supply and completely install all distribution cables as indicated on the drawings and listed in the Schedule of Cables.

The storage, transportation, handling and laying of the cables shall be according to first class practice, and the contractor shall have adequate and suitable equipment and labor

to ensure that no damage is done to cables during such operations.

The cable-trenches shall be excavated to a depth of 0,9m deep below ground level and shall be 450mm wide for one to three cables, and the width shall be increased where more than three cables are laid together so that the cables may be placed at least two cable diameters apart throughout the run. The bottom of the trench shall be level and clean and the bottom and sites free from rocks or stones liable to cause damage to the cable.

The Contractor must take all necessary precautions to prevent the trenching work being in any way a hazard to the personnel and public and to safeguard all structures, roads, sewage works or other property on the site from any risk of subsidence and damage.

In the trenches the cables shall be laid on a 75mm thick bed of earth and be covered with a 150mm layer of earth before the trench is filled in.

All joints in underground cables and terminations shall be made either by means of compound filled boxes according to the best-established practice by competent cable jointers using first class materials or by means of approved epoxy-resin pressure type jointing kits such as "Scotchcast". Epoxy-resin joints must be made entirely in accordance with the manufacturer's instructions and with materials stipulated in such instructions. Low tension PVCA cables are to be made off with sealing glands and materials designed for this purpose which must be of an approved make. Where cables are cut and not immediately made off, the ends are to be sealed without delay.

The laying of cables shall not be commenced until the trenches have been inspected and approved. The cable shall be removed from the drum in such a way that no twisting, tension, or mechanical damage is caused and must be adequately supported at intervals during the whole operation. Particular care must be exercised where it is necessary to draw cables through pipes and ducts to avoid abrasion, elongation or distortion of any kind. The ends of such pipes and ducts shall be sealed to approval after drawing in of the cables.

Backfilling (after bedding) of the trenches is to be carried out with a proper grading of the material to ensure settling without voids, and the material is to be tamped down after the addition of every 150mm. The surface is to be made good as required.

On each completed section of the laid and jointed cable, the insulation resistance shall be tested to approval with an approved "Megger" type instrument of not less than 500V for low tension cables.

Earth continuity conductors are to be run with all underground cables constituting part of a low-tension distribution system. Such continuity conductors are to be stranded bare copper of a cross-sectional area equal to at least half that of one of the live conductors of the cable but shall not be less than 2.5mm². A single earth wire may be used as earth continuity conductor for two or more cables run together, branch earth wires being brazed on where required.

14.1 LAYING, JOINTING AND MAKING OFF OF ELECTRICAL CABLES

[The requirements specified hereafter, are aimed essentially at high tension cable

but are also valid for low tension cable, where applicable.]

1. The use of the term “Inspector” includes the engineer or inspector of the Client or an empowered person of the concerned supervising consulting engineer’s firm.
2. No cable is to be laid before the cable trench is approved and the soil qualification of the excavation is agreed upon by the Contractor and inspector.
3. After the cable has been laid and before the cable trench is back-filled the inspector must ensure that the cable is properly bedded and that there is no undesirable material included in the bedding layer.
4. All cable jointing and the making-off of the cables must only be carried out by qualified experienced cable jointers. Helpers of the jointers may not saw, strip, cut, solder, etc. The cable and other work undertaken by them must be carried out under the strict and constant supervision of the jointer.
5. Before the Contractor allows the jointer to commence with the jointing work or making off of the cable (making off is recognized as half a joint) he must take care and ensure:
 - 5.1 that he has adequate and suitable material available to complete the joint properly and efficiently. Special attention must be given to ensure the cable ferrules and cable lugs are of tinned copper and of sufficient size. The length of the jointing lugs must be at least six times the diameter of the conductor,
 - 5.2 that the joint pit is dry and that all loose stones and material are removed,
 - 5.3 that the walls and banks of the joint pit are reasonable firm and free from loose material which can fall into the pit,
 - 5.4 that the necessary cofferdams or retaining walls are made to stop the flow of water into the joint pit,
 - 5.5 that the joint pit is provided with suitable groundsheets so that the jointing work is carried out in clean conditions,
 - 5.6 that the necessary tents or sails are installed over the joint pit to effectively avert unexpected rainfall and that sufficient light or lighting is provided,
 - 5.7 that the necessary means are available to efficiently seal the jointing or cable end when an unexpected storm or cloudburst occurs, regardless of how far the work has progressed,
 - 5.8 that the cables and other materials are dry, undamaged and in all respects are suitable for the joint work or making off,
 - 5.9 that the heating of cable oil, cable compound, plumbers’ metal and solder is arranged that they are at the correct temperature when required so that the cable is not unnecessarily exposed to the atmosphere and consequently the ingress of moisture (care must be taken of overheating)

Flow temperatures of cable oil and compound must be determined with suitable thermometers. Cable oil and compound must not be heated to exceed the temperatures given on the containers and precaution must be taken to ensure that the tin is not overheated in one position. The whole mass must be evenly and proportionally heated.

(Temperatures of solder and plumbers' metal may be tested with brown paper (testing time: 3 seconds). The paper must colour slightly - not black or burnt.

6. Before the paper-insulated cables are joined, they must be tested for the presence of moisture by the cable jointers test. This consists of the insertion of a piece of unhandled insulated impregnated paper tape in warm cable oil heated to a temperature of $130 \pm 5^{\circ}\text{C}$.

Froth on the surface of the oil is an indication that moisture is present in the impregnated insulation and the amount of the froth gives an indication of the moisture present.

7. If the cable contains moisture or is found to be otherwise unsuitable for jointing or making of the inspector is to be notified immediately and he will issue the necessary instruction to cope with the situation.
8. The joint or making off of paper insulated cables must not be commenced during rainy weather.
9. Once a joint is in progress the jointer must proceed with the joint until it is complete and before he leaves the site.
10. The jointer must ensure that the material and his tools are dry at all times, reasonably clean and absolutely free from soil.
11. Relating to the jointing of the cable the following requirements apply:
 - 11.1 All jointing must be carried out in accordance with recognized and tried techniques and comply strictly with the instructions given by the supplier of the jointing kit.
 - 11.2 The cables must be twisted by hand so that the cores can be joined according to the core numbers. If necessary, the cable is to be exposed for a short distance to accomplish this. Under no circumstances may the cores in a joint be crossed so as to enable cores to be joined according to the core numbers. If it is not possible to twist the cables so that the preceding requirements can be met, then cores are to be joined in the normal way without any consideration of the core numbers.
 - 11.3 Normally the cables will have profile conductors. The conductors shall be pinched with gas pliers to form a circular section, bound with binding wire so that they do not spread, and then tinned before jointing.
 - 11.4 Jointing ferrules, the length of which are at least 6 times the diameter of the conductors, must be slid over the conductor ends to be joined and pinched tightly. Then they are soldered by means of the ladle process whilst being pinched further

closed.

Use resin only as a flux. The slot opening in the ferrule must be filled, including all depressions.

Remove all superfluous metal with a cloth dipped in tallow. Work during the soldering process must be from top to bottom. Rub the ferrule smooth and clean with aluminum oxide tape after it has cooled down to ensure that there are not any sharp points or edges.

NB: The spaces between the conductor strands must be completely filled by soldering process and must be carried out quick enough to prevent the paper insulation from burning or drying out unnecessarily.

11.5 After the ferrules have been rubbed smooth and clean, they and the exposed cores must be treated with hot cable oil (110°C) to remove all dust and moisture. These parts are to be thoroughly basted with the oil.

11.6 The joiner must take care that his hands are dry and clean before the joint is insulated. Also the insulating tape which is to be used must first be immersed in warm cable oil (110°C) for a sufficient period to ensure that no moisture is present.

11.7 After the individual cores have been installed, they must be well basted with hot cable oil and again after the applicable separator and/or belt insulation tape is applied before the lead joint sleeve is placed in position.

11.8 The lead joint sleeve must be thoroughly cleaned and prepared before it is placed on the cable and must be kept clean during the whole jointing process. Seal the filling apertures of the sleeve with tape until the sleeve is ready for compound filling.

11.9 The plumbing joints employed to solder the joint sleeve to the cable sheath, must be cooled off with tallow and the joint sleeve is to be filled with compound while it is still warm. Top up continuously until the joint is completely filled to compensate for the compound shrinkage.

11.10 The outer joint box must be clean and free from corrosion. After it has been placed in position it must be slightly heated before being filled with compound. Top up until completely full.

12. As far as cable end boxes are concerned the requirements as set out above are valid where applicable.

15. DISTRIBUTION BOARDS

In addition to clause 14 and clause 15 of Part 1 of this specification the following shall also be applicable to switchboards required for this service.

The Contractor shall supply and install the distribution boards as indicated on the drawings and listed in the distribution Board Schedule. All distribution be approved by the Client's representative.

16. SCHEDULE OF LIGHT FITINGS

The light fittings and accessories shall be approved by the Client/Clients representative.

17. SCHEDULE OF DISTRIBUTION BOARDS

Distribution boards to be manufactured as per single line drawings issued by the engineer.

BUILDER'S WORK BILLS OF QUANTITIES (EIKENHOFF FARM)

Item No		Quantity	Amount	
	<p><u>SECTION NO 1</u></p> <p><u>BILL NO. 1</u> <u>PRELIMINARIES</u></p> <p><u>BUILDING AGREEMENT AND PRELIMINARIES</u></p> <p>The JBCC Principal Building Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described</p> <p>The JBCC Principal Building Agreement contract data form an integral part of this agreement</p> <p>The JBCC General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the JBCC Principal Building Agreement (Edition 6.2 - May 2018) shall be deemed to be incorporated in these bills of quantities, amended as hereinafter described</p> <p>The contractor is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause</p> <p>The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only</p> <p>Where any item is not relevant to this agreement such item is marked N/A signifying "not applicable"</p> <p>Where standard clauses or alternatives are not entirely applicable to this agreement such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the abovementioned documents</p> <p><u>PREAMBLES FOR TRADES</u></p> <p>The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these bills of quantities and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained</p> <p>Supplementary preambles and/or specifications are incorporated in these bills of quantities to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R		

	<p style="text-align: right;">Brought Forward</p> <p>The contractor's prices for all items throughout these bills of quantities shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications</p> <p><u>STRUCTURE OF THIS PRELIMINARIES BILL</u></p> <p>Section A : A recital of the headings of the individual clauses in the aforementioned JBCC Principal Building Agreement</p> <p>Section B : A recital of the headings of the individual clauses in the aforementioned JBCC General Preliminaries</p> <p>Section C : Any special clauses to meet the particular circumstances of the project</p> <p><u>PRICING OF PRELIMINARIES</u></p> <p>Should the contractor select Option A in the contract data for the adjustment of preliminaries, the amounts entered against the relevant items in these preliminaries are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)</p> <p><u>SECTION A: PRINCIPAL BUILDING AGREEMENT</u></p> <p><u>Interpretation (A1-A7)</u></p> <p>1 Clause 1.0 - Definitions and interpretation</p> <p>Pricing of bills of quantities</p> <p>The contractor is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this agreement. Value Added Tax (VAT) is to be separately stated on the summary page of these bills of quantities</p> <p>Items left unpriced will be deemed to be covered in prices against other items throughout these bills of quantities and no claim for any extras arising out of the contractor's omission to price any item will be entertained</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

	<p style="text-align: right;">Brought Forward</p> <p>Prices for all construction equipment, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary</p> <p>Abbreviated descriptions</p> <p>The items in these bills of quantities utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the contractor shall, before submission of his tender, call for a written directive from the principal agent, failing which it shall be assumed that the contractor has allowed in his pricing for materials and workmanship in terms of international best practice</p> <p>Legal status of contractor</p> <p>If the contractor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then:</p> <ol style="list-style-type: none"> 1. These persons are deemed to be jointly and severally liable to the employer for the performance of this agreement 2. These persons shall notify the employer of their leader who has assigned authority to bind the contractor and each of these persons 3. The contractor shall not alter its composition or legal status without the prior written consent of the employer <p>F:..... V:..... T:.....</p> <p>2 Clause 2.0 - Law, regulations and notices</p> <p>NHBRC levies</p> <p>The employer shall allow for and pay any levies required by the National Home Builders Registration Council (NHBRC). The contractor warrants that he is registered and will maintain registration with the NHBRC for the duration of this agreement [2.1]</p> <p>3 F:..... V:..... T:.....</p> <p>4 Clause 3.0 - Offer and acceptance</p> <p>F:..... V:..... T:.....</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	<p style="text-align: center;">R</p> <p style="text-align: center;">Item</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">Item</p> <p style="text-align: center;">R</p>	
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	Brought Forward	R	
5	<p>Clause 4.0 - Cession and assignment</p> <p>F:..... V:..... T:.....</p>	Item	
6	<p>Clause 5.0 - Documents</p> <p>Value Added Tax</p> <p>Provision is made in the summary page of these bills of quantities for the inclusion of Value Added Tax (VAT)</p> <p>Priced document as specification</p> <p>Clause 5.4 is deemed to be deleted</p> <p>The principal agent shall decide which portion of the priced document may be used as a specification of materials and goods or methods, if any.</p> <p>Electronic issue of drawings</p> <p>All drawings for this project will be issued electronically and the contractor shall be deemed to have received such drawings on the date that such drawings have been dispatched electronically [5.6]</p> <p>F:..... V:..... T:.....</p>	Item	
7	<p>Clause 6.0 - Employer's agents</p> <p>Delegated authority</p> <p>The authority of the principal agent to issue contract instructions [17.1] and perform duties for specific aspects of the works is delegated to agents as follows [6.2]. This does not preclude the principal agent from issuing such contract instructions:</p> <p>1. <u>Architect</u></p> <p>1.1 Duties [6.2] :</p> <p>The architect is responsible for the architectural design, functional design and quality inspection of the works</p> <p>1.2 Contract instructions [6.2; 17.1] :</p> <p>1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

<p style="text-align: right;">Brought Forward</p> <p>1.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>1.2.3 The site [13.0]</p> <p>1.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>1.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>1.2.7 Removal or re-execution of work</p> <p>1.2.8 Removal or substitution of any materials and goods</p> <p>1.2.9 Protection of the works</p> <p>1.2.10 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>1.2.11 Rectification of defects [21.2]</p> <p>1.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>1.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums</p> <p>1.2.14 Appointment of a subcontractor [14.0; 15.0]</p> <p>1.2.15 Work by direct contractors [16.0]</p> <p>1.2.16 On suspension or termination, protection of the works, removal of construction equipment and surplus materials and goods [29.0]</p> <p>2. <u>Quantity surveyor</u></p> <p>2.1 Duties [6.2] :</p> <p>The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the works</p> <p>2.2 Contract instructions [6.2; 17.1] :</p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>2.2.1 No contract instructions delegated to the quantity surveyor.</p> <p>3. <u>Civil and structural engineer</u></p> <p>3.1 Duties [6.2] :</p> <p>The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the works</p> <p>3.2 Contract instructions [6.2; 17.1] :</p> <p>3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>3.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>3.2.3 The site [13.0]</p> <p>3.2.4 Compliance with the law, regulations and bylaws [2.1]</p> <p>3.2.5 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>3.2.7 Removal or re-execution of work</p> <p>3.2.8 Removal or substitution of any materials and goods</p> <p>3.2.9 Protection of the works</p> <p>3.2.10 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>3.2.11 Rectification of defects [21.2]</p> <p>3.2.12 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>3.2.13 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>4. <u>Mechanical engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>4.1 Duties [6.2] :</p> <p>The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>4.2 Contract instructions [6.2; 17.1] :</p> <p>4.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>4.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>4.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>4.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>4.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>4.2.6 Removal or re-execution of work</p> <p>4.2.7 Removal or substitution of any materials and goods</p> <p>4.2.8 Protection of the works</p> <p>4.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>4.2.10 Rectification of defects [21.2]</p> <p>4.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>4.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>5. <u>Electrical engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>5.1 Duties [6.2] :</p> <p>The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection of the works and, where appointed by the employer for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions</p> <p>5.2 Contract instructions [6.2; 17.1] :</p> <p>5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>5.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>5.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>5.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>5.2.6 Removal or re-execution of work</p> <p>5.2.7 Removal or substitution of any materials and goods</p> <p>5.2.8 Protection of the works</p> <p>5.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>5.2.10 Rectification of defects [21.2]</p> <p>5.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>5.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>6. <u>Wet services engineer</u></p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>6.1 Duties [6.2] :</p> <p>The wet services engineer is responsible for all aspects of wet services engineering design and quality inspection of the works</p> <p>6.2 Contract instructions [6.2; 17.1] :</p> <p>6.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>6.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>6.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>6.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>6.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>6.2.6 Removal or re-execution of work</p> <p>6.2.7 Removal or substitution of any materials and goods</p> <p>6.2.8 Protection of the works</p> <p>6.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>6.2.10 Rectification of defects [21.2]</p> <p>6.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>6.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>7. <u>Fire consultant</u></p> <p>7.1 Duties [6.2] :</p> <p>The fire consultant is responsible for all aspects of rational fire design and quality inspection of the works</p> <p>7.2 Contract instructions [6.2; 17.1] :</p>	R	
<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	

<p style="text-align: right;">Brought Forward</p> <p>7.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the agreement other than in the JBCC Principal Building Agreement</p> <p>7.2.2 Alteration to design, standards or quantity of the works provided that such contract instructions shall not substantially change the scope of the works</p> <p>7.2.3 Compliance with the law, regulations and bylaws [2.1]</p> <p>7.2.4 Provision and testing of samples of materials and goods and/or of finishes and assemblies of elements of the works</p> <p>7.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]</p> <p>7.2.6 Removal or re-execution of work</p> <p>7.2.7 Removal or substitution of any materials and goods</p> <p>7.2.8 Protection of the works</p> <p>7.2.9 Making good physical loss and repairing damage to the works [23.2.2]</p> <p>7.2.10 Rectification of defects [21.2]</p> <p>7.2.11 A list for practical completion specifying outstanding or defective work to be rectified to achieve practical completion, a list for completion and a list for final completion specifying outstanding or defective work to be rectified to achieve final completion</p> <p>7.2.12 Expenditure of budgetary allowances, prime cost amounts and provisional sums.</p> <p>8. <u>Health and safety consultant</u></p> <p>8.1 Duties [6.2] :</p> <p>The health and safety consultant is responsible for all aspects of health and safety of the works. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the works. He shall:</p> <p>8.1.1 Act as the employer's agent in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended</p> <p>8.1.2 Prepare and update the health and safety specification for the works</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	R	
	R	

	Brought Forward	R	
8.1.3	Agree with the contractor the health and safety plan for the works		
8.1.4	Carry out regular audits to ensure adherence to the safety plan and compliance with the act and regulations		
8.1.5	Stop the execution of the works where the agreed specification or plan is not adhered to.		
	F:..... V:..... T:.....	Item	
8	Clause 7.0 - Design responsibility		
	F:..... V:..... T:.....	Item	
	<u>Insurances and securities (A8-A11)</u>		
9	Clause 8.0 - Works risk		
	F:..... V:..... T:.....	Item	
10	Clause 9.0 - Indemnities		
	F:..... V:..... T:.....	Item	
11	Clause 10.0 - Insurances		
	F:..... V:..... T:.....	Item	
12	Clause 11.0 - Securities		
	Guarantee for payment		
13	The employer shall provide to the contractor a guarantee for payment in the amount ofNot Applicable.....Rand (R.....N/A.....) [11.5.1]. The contractor shall consequently waive his lien or right of continuing possession of the works [11.10]		
	F:..... V:..... T:.....	N/A	
	Extension of waiver of lien		
14	The contractor shall ensure that a waiver of lien is included in all subcontracts and that the works executed on the site are kept free of all liens and other encumbrances at all times [11.10]		
15	F:..... V:..... T:.....	Item	
	Carried Forward	R	
	Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries		

	Brought Forward	R	
	<u>Execution (A12 - A17)</u>		
16	<p>Clause 12.0 - Obligations of the parties</p> <p>Office accommodation</p> <p>The contractor shall provide, maintain and remove on practical completion air conditioned office accommodation with suitable tables and chairs for meetings to be held on the site. Such offices shall be kept clean and fit for use at all times [12.2.18]</p> <p>Notice board</p> <p>The contractor shall erect in a position approved by the principal agent, maintain and remove on practical completion a notice board recommended by the South African Institute of Architects and as approved by the principal agent listing the names and logos of the employer, the contractor and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the principal agent for such notice boards to be erected [12.2.18]</p> <p>Statutory and other notices</p> <p>The contractor shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the works by the contractor. The contractor shall pay all deposits or fees in this regard</p> <p>It is, however, specifically recorded that the employer shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto</p> <p>F:..... V:..... T:.....</p>	Item	
17	<p>Clause 13.0 - Setting out</p> <p>F:..... V:..... T:.....</p>	Item	
18	<p>Clause 14.0 - Nominated subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
19	<p>Clause 15.0 - Selected subcontractors</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
20	<p>Clause 16.0 - Direct contractors</p> <p>Attendance on direct contractors</p> <p>In respect of direct contractors the contractor shall:</p> <ol style="list-style-type: none"> 1. Designate an area for the direct contractor to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the direct contractor to use erected scaffolding, hoisting facilities, etc provided by the contractor, in common with others having the like right, while it remains erected on the site [16.1] <p>F:..... V:..... T:.....</p>	Item	
21	<p>Clause 17.0 - Contract instructions</p> <p>Site instructions</p> <p>Instructions issued on site are to be recorded in a site instruction book which is to be supplied and maintained on site by the contractor .</p> <p>F:..... V:..... T:.....</p> <p><u>Completion (A18 - A24)</u></p>	Item	
22	Clause 18.0 - Interim completion	N/A	
23	<p>Clause 19.0 - Practical completion</p> <p>F:..... V:..... T:.....</p>	Item	
24	<p>Clause 20.0 - Completion in sections</p> <p>F:..... V:..... T:.....</p>	Item	
25	<p>Clause 21.0 - Defects liability period and final completion</p> <p>F:..... V:..... T:.....</p>	Item	
26	<p>Clause 22.0 - Latent defects liability period</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
27	<p>Clause 23.0 - Revision of the date for practical completion</p> <p>Substitution of materials and goods</p> <p>The removal or substitution of any materials and goods which do not conform to the specification or the contract drawings shall not constitute grounds for the extension of the construction period nor for the adjustment of the contract value [17.1.8; 23.1 & 2]</p> <p>F:..... V:..... T:.....</p>	Item	
28	<p>Clause 24.0 - Penalty for late or non-completion</p> <p>F:..... V:..... T:.....</p> <p>Payment (A25 - A27)</p>	Item	
29	<p>Clause 25.0 - Payment</p> <p>Prices submitted</p> <p>Where prices are submitted by the contractor or subcontractor during the progress of the works in respect of contract instructions or in regard to a claim under the terms of this agreement and notwithstanding the fact that such prices may be used in an interim payment certificate, there is to be no presumption of acceptance. Should the principal agent wish to accept any such prices prior to the issue of the certificate of final completion, it shall be in writing</p> <p>F:..... V:..... T:.....</p>	Item	
30	<p>Clause 26.0 - Adjustment of the contract value and final account</p> <p>Fluctuations in costs</p> <p>All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax and CPAP (Where applicable), shall be for the account of the contractor [26.9.5]</p> <p>Contract Price Adjustment Provision to be calculated in accordance with the CPAP Indices Application Manual for use with P0151.1 indices published by Statistics South Africa</p> <p>Tenant installation/user requirements delayed</p> <p>There is a possibility that certain works related to tenant installation/user requirements may have to be delayed and may consequently not be executed prior to practical completion</p>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	<p>Should the contractor be instructed to do so he shall execute this work under the conditions pertaining to this agreement on the basis that a separate amount for preliminaries appurtenant to this work (if applicable) is agreed to between the contractor and the principal agent and on condition that instruction to proceed with such work is given to him within a period of three (3) calendar months after the date of practical completion of the works</p> <p>The employer reserves the right to omit such work without compensation to the contractor for loss of profit or any other loss which the contractor may suffer as a result of such omission.</p> <p>Cost of claims</p> <p>All costs incurred by the contractor in the preparation of claims shall be borne by the contractor. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this agreement [30.6 & 7] from making a determination on costs</p> <p>Claims from subcontractors</p> <p>The contractor shall review, assess and adjudicate any claims received by him from any subcontractor and thereafter submit same to the principal agent with a recommendation in order to assist the principal agent in adjudicating the claim [26.6]</p> <p>F:..... V:..... T:.....</p>		
31	<p>Clause 27.0 - Recovery of expense and/or loss</p> <p>F:..... V:..... T:.....</p>	Item	
		Item	
	<u>Suspension and termination (A28 - A29)</u>		
32	<p>Clause 28.0 - Suspension by the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
33	<p>Clause 29.0 - Termination</p> <p>F:..... V:..... T:.....</p>	Item	
	<u>Dispute resolution (A30)</u>		
34	<p>Clause 30.0 - Dispute resolution</p> <p>F:..... V:..... T:.....</p>	Item	
35	<u>Agreement</u>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	The required information of the parties and the amount of the contract sum shall be inserted in the agreement for signature of the agreement by the parties F:..... V:..... T:.....	Item	
36	<u>Contract data</u> Tenderer's selections Before submission of his tender the contractor is to complete the tenderer's selections in the contract data F:..... V:..... T:.....	Item	
	<u>SECTION B: GENERAL PRELIMINARIES</u>		
	<u>Definitions and interpretation (B1)</u>		
37	Clause 1.1 - Definitions F:..... V:..... T:.....	Item	
38	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item	
	<u>Documents (B2)</u>		
39	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item	
40	Clause 2.2 - Provisional bills of quantities Multiple procurement These bills of quantities are in multiple procurement format ie the "wet trades" - earthworks, concrete, formwork and reinforcement, precast concrete, masonry, waterproofing and sub-surface drainage - are provisionally measured and the subsequent trades are budgetary allowances and/or provisional sums. F:..... V:..... T:.....	Item	
41	Clause 2.3 - Availability of construction information F:..... V:..... T:.....	Item	
	Carried Forward	R	
	Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries		

		Brought Forward	R	
42	<p>Clause 2.4 - Ordering of materials and goods</p> <p>F:..... V:..... T:.....</p> <p><u>Previous work and adjoining properties (B3)</u></p>		Item	
43	<p>Clause 3.1 - Previous work - dimensional accuracy</p> <p>F:..... V:..... T:.....</p>		Item	
44	<p>Clause 3.2 - Previous work - defects</p> <p>F:..... V:..... T:.....</p>		Item	
45	<p>Clause 3.3 - Inspection of adjoining properties</p> <p>F:..... V:..... T:.....</p> <p><u>The site (B4)</u></p>		Item	
46	<p>Clause 4.1 - Handover of site in stages</p> <p>F:..... V:..... T:.....</p>		Item	
47	<p>Clause 4.2 - Enclosure of the works</p> <p>F:..... V:..... T:.....</p>		Item	
48	<p>Clause 4.3 - Geotechnical and other investigations</p> <p>F:..... V:..... T:.....</p>		Item	
49	<p>Clause 4.4 - Encroachments</p> <p>F:..... V:..... T:.....</p>		Item	
50	<p>Clause 4.5 - Existing premises occupied</p> <p>F:..... V:..... T:.....</p>		Item	
51	<p>Clause 4.6 - Services - known</p> <p>F:..... V:..... T:.....</p> <p><u>Management of contract (B5)</u></p>		Item	
52	<p>Clause 5.1 - Management of the works</p> <p>F:..... V:..... T:.....</p>		Item	
		Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>			

		Brought Forward	R	
53	Clause 5.2 - Progress meetings F:..... V:..... T:.....		Item	
54	Clause 5.3 - Technical meetings F:..... V:..... T:.....		Item	
	<u>Samples, shop drawings and manufacturer's instructions (B6)</u>			
55	Clause 6.1 - Samples of materials F:..... V:..... T:.....		Item	
56	Clause 6.2 - Workmanship samples F:..... V:..... T:.....		Item	
57	Clause 6.3 - Shop drawings F:..... V:..... T:.....		Item	
58	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....		Item	
	<u>Deposits and fees (B7)</u>			
59	Clause 7.1 - Deposits and fees F:..... V:..... T:.....		Item	
	<u>Temporary services (B8)</u>			
60	Clause 8.1 - Water F:..... V:..... T:.....		Item	
61	Clause 8.2 - Electricity F:..... V:..... T:.....		Item	
62	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....		Item	
63	Clause 8.4 - Communication facilities F:..... V:..... T:.....		Item	
		Carried Forward	R	
	Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries			

	Brought Forward	R	
	<u>Prime cost amounts (B9)</u>		
64	<p>Clause 9.1 - Responsibility for prime cost amounts</p> <p><i>Where details of materials for which prime cost amounts are to be allowed <u>are</u> readily available, the quantity surveyor may elect to insert the relevant prime cost amounts in measured items, which measured items shall contain sufficient detail for the contractor to price for fixing and installation, waste, etc</i></p> <p>F:..... V:..... T:.....</p>	Item	
	<u>Attendance on subcontractors (B10)</u>		
65	<p>Clause 10.1 - General attendance</p> <p><i>General attendance is defined as being the duties of the contractor in terms of clause 12.2 of the JBCC n/s subcontract agreement</i></p> <p>F:..... V:..... T:.....</p>	Item	
66	<p>Clause 10.2 - Special attendance</p> <p>F:..... V:..... T:.....</p>	Item	
	<u>General (B11)</u>		
67	<p>Clause 11.1 - Protection of the works</p> <p>F:..... V:..... T:.....</p>	Item	
68	<p>Clause 11.2 - Protection/isolation of existing works and works occupied in sections</p> <p>F:..... V:..... T:.....</p>	Item	
69	<p>Clause 11.3 - Security of the works</p> <p>F:..... V:..... T:.....</p>	Item	
70	<p>Clause 11.4 - Notice before covering work</p> <p>F:..... V:..... T:.....</p>	Item	
71	<p>Clause 11.5 - Disturbance</p>		
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	<p>Disturbance</p> <p>All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the construction period or contract value whatsoever.</p> <p>F:..... V:..... T:.....</p>	Item	
72	<p>Clause 11.6 - Environmental disturbance</p> <p>Controlling all forms of pollution</p> <p>The contractor shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the site during the construction period due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc</p> <p>The contractor is to ensure that all roads which border the site and are used by the contractor during the execution of the works are kept clean and free of any dirt or debris caused by the execution of the works.</p> <p>F:..... V:..... T:.....</p>	Item	
73	<p>Clause 11.7 - Works cleaning and clearing</p> <p>F:..... V:..... T:.....</p>	Item	
74	<p>Clause 11.8 - Vermin</p> <p>F:..... V:..... T:.....</p>	Item	
75	<p>Clause 11.9 - Overhand work</p> <p>F:..... V:..... T:.....</p>	Item	
76	<p>Clause 11.10 - Tenant installations</p> <p>F:..... V:..... T:.....</p>	Item	
77	<p>Clause 11.11 - Advertising</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

	Brought Forward	R	
	<u>SECTION C: SPECIFIC PRELIMINARIES</u>		
78	<p>Warranties for materials and workmanship</p> <p>Where warranties for materials and/or workmanship are called for, the contractor shall obtain a written warranty, addressed to the employer, from the entity supplying the materials and/or executing the work and shall deliver same to the principal agent on final completion of the contract</p> <p>The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of practical completion and that any defects that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written notice to do so</p> <p>The warranty will not be enforced if the work is damaged by defects in the execution of the works, in which case the responsibility for replacement shall rest entirely with the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
79	<p>Overtime</p> <p>Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the contractor unless the principal agent has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the employer</p> <p>F:..... V:..... T:.....</p>	Item	
80	<p>Cooperation of the contractor for cost management</p> <p>It is specifically agreed that the contractor accepts the obligation of assisting the principal agent in implementing proper cost management. The contractor will be advised by the principal agent of all cost management procedures which will be implemented to ensure that the contract value does not exceed the budget</p> <p>F:..... V:..... T:.....</p>	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

		Brought Forward	R	
81	Overloading	<p>The contractor shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the works or temporary works eg scaffolding, etc. The contractor shall submit details of his proposed loading, storage, plant erection, etc to the principal agent for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the principal agent's requirements in connection with the provision of temporary support work, etc. Any damage caused to the works by overloading shall be made good by the contractor at his sole expense</p> <p>F:..... V:..... T:.....</p>	Item	
82	Propping of floors below	<p>The contractor is advised that propping of floors below may be required if he wishes to use any areas of completed suspended reinforced concrete slabs for vehicle access, storage of materials and goods and location of plant, scaffolding, etc. The location of these areas and any necessary propping shall be approved by the principal agent and the cost thereof shall be borne by the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
83	Testing of flat roof waterproofing for watertightness	<p>Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing</p> <p>F:..... V:..... T:.....</p>	Item	
84	Site instructions	<p>Instructions issued on site are to be recorded in a triplicate site instruction book which is to be maintained on site by the contractor</p> <p>F:..... V:..... T:.....</p>	Item	
85	Non-Cession of Monies	<p>The Contractor shall not cede or assign his right or claims to any monies due to or to become due under this Contract</p> <p>F:..... V:..... T:.....</p>	Item	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

		Brought Forward	R	
86	<p>Drawings on Site</p> <p>The Contractor shall maintain on Site at all times, a complete set of the latest revisions of the working drawings issued by the Architect, the Engineer, and the Electrical Consultant</p> <p>F:..... V:.....T:.....</p>		Item	
87	<p>Labour Record</p> <p>At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all subcontractors on the works each day</p> <p>F:..... V:.....T:.....</p>		Item	
88	<p>Plant Record</p> <p>At the end of each week the contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used for the works.</p> <p>F:..... V:.....T:.....</p>		Item	
89	<p>Scaffolding</p> <p>No scaffolding is measured as these Bills of Quantities are based on the Sixth edition of the Standard System for Measuring Building Work. However, the Tenderer is advised to study the drawings as scaffolding shall be required in certain areas for use by himself and selected/nominated subcontractors and the contractor must establish or otherwise required by him or selected/nominated subcontractor including taking down and reerecting as may be necessary and no claims whatsoever will be entertained</p> <p>F:..... V:.....T:.....</p>		N/A	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

<p>90</p>	<p style="text-align: right;">Brought Forward</p> <p>Daywork</p> <p>Where in the opinion of the Principal Agent any extra work cannot properly be measured or valued, the Contractor will be allowed daywork prices therefore calculated upon the costs defined hereunder together with the stated percentages. The total thus arrived at shall be the total amount recoverable by the Contractor for performing such work</p> <ol style="list-style-type: none"> 1. The costs to the Contractor or sub-contractor of materials, being the net cost (at current market prices) actually paid for such materials after the deduction of cash discounts or if materials are supplied from the Contractor's or sub-contractor's stock then the cost of such materials shall be based upon the current market price plus the cost of delivery to Site; to which net cost 7,5% thereof shall be added. 2. The cost of labour to the Contractor or sub contractor, being all items of direct cost of labour actually remunerated to the workmen concerned which shall include the cost of all allowances in terms of the industrial Conciliation Act (where applicable) or any other wage determination applying in the area where the daywork is executed: to which labour cost 7,5% shall be added. <p>Hourly base rates for labour shall be the current market rates for labour based upon standard working hours and shall be applied in respect of the time spent by workers directly engaged on the particular day works including any operators mechanical plant and transport and erecting and dismantling other plant. If a claim is made that individual workmen have been paid wages and allowances in excess of the minimum legalised rates, then proof must be furnished that such workmen had been so paid prior to the commencement of the daywork referred to.</p> <ol style="list-style-type: none"> 3. The rate for mechanical plant shall be commercial hire rates current at the time of executing the daywork and shall include fuel and insurance costs. <p>The above percentages shall cover head office charges; Site staff including Site supervision; third party and Contractors workmen compensation and unemployment insurance fund contributions; use, repair and sharpening of non-mechanical hand tools; use of erected scaffolding, staging, trestles and the like; use of tarpaulins, protective clothing, artificial lighting, safety and welfare facilities, storage and the like as may be available on site; and profit.</p> <p>Supporting vouchers reflecting the time spent and materials used in each week shall be delivered for verification to the Principal Agent not later than twenty calendar days after the end of the week concerned. Should the Contractor fail to submit the vouchers within this time, the Principal Agent shall determine a fair price for the work.</p> <p>F:..... V:..... T:.....</p>	<p>R</p>	
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		<p>R</p>

<p>91</p>	<p style="text-align: right;">Brought Forward</p> <p>Clause 6.3: Shop Drawings</p> <p>The term 'Shop Drawings' shall mean drawings, layout drawings, illustrations, schedules, performance charts, brochures, operating manuals, other data which are prepared by the Contractor or Sub-contractor, Manufacturer, Supplier or Distributor and which illustrate some portion of the work.</p> <p>The Contractor shall ensure that all shop drawings required for the work in terms of this Contract, all selected/nominated Sub-contracts and/or Architect's instructions, are prepared and submitted timeously in accordance with the following procedure:</p> <ol style="list-style-type: none"> 1. Three prints of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules shall be submitted to the Architect for approval. Such work shall not be carried out until such approval has been given. 2. Shop drawings shall be submitted to the Architect for approval at least two weeks prior to the date on which such approval is required in order to comply with the Contract Programme. 3. All submissions shall be prepared in accordance with the Contract Drawings and specifications and/or any Architect's instructions and any deviation shall be specifically highlighted in writing, with a detailed explanation of the reason of such deviation, together with any cost and/or time implication <p>Delays in approval of shop drawings due to non compliance with drawings, specifications and/or Architect's instructions shall not constitute grounds for any delay claims</p> <p>F:..... V:.....T:.....</p>	<p>R</p>	
<p>92</p>	<p>Location of Temporary Building and Temporary Services</p> <p>The Contractor shall provide all necessary temporary works, including temporary roads, tracks, crossings, hardstanding, and services, etc., required for his own Sub-contractors use during the construction and maintenance period.</p> <p>There is no guarantee given or implied that site conditions will be such that the Contractor will be able to erect such offices, stores and temporary accommodation within the site boundaries and it shall be the Contractors responsibility to adopt whatever measures he deems necessary in this regard and to obtain all necessary permission and pay all costs in connection therewith</p> <p>F:..... V:.....T:.....</p>	<p>Item</p>	
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>	<p>R</p>	

		Brought Forward	R	
93	<p>Removal and Making Good of Temporary Works, etc on Completion</p> <p>The Contractor shall remove all temporary works, roads, services and the like used for this contract and shall make good to the entire satisfaction of the Architect any damages resulting therefrom</p> <p>F:..... V:.....T:.....</p>		Item	
94	<p>Indemnities</p> <p>Indemnities shall be sought by the Architect from all Contractors and Sub-contractors undertaking any design responsibility</p> <p>F:..... V:.....T:.....</p>		Item	
95	<p>Transformation and Empowerment Requirements</p> <p>The contractor shall take all necessary measures to comply with the Clause 3.3 of the returnable document (Small Contractor Development, Participation and Advancement of Start-Up, Small and Micro Enterprises) and make adequate provision to accommodate the requirements relating to job creation, job intensity, training and development, local SMME utilisation, local material utilisation, enterprise development, etc. as detailed in the returnable document</p> <p>F:..... V:.....T:.....</p>		Item	
96	<p>Health and safety</p>			
97	<p>Without limiting the generality of the provisions of clause 2.0, the contractor's attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the employer shall prepare a documented health and safety specification for the works (refer to OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION FOR EIKENHOFF FARM) and that the employer shall ensure that the contractor has made provision for the cost of health and safety measures during the execution of the works. The contractor shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1]</p>			
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

	Brought Forward	R	
	<p>For compliance with Occupational health and Safety Act 1993 as amended, The contractor shall:</p> <ol style="list-style-type: none"> 1. Comply with the health and safety specification for the works that will include provision for COVID-19 Regulations. 2. Prepare and agree with the health and safety consultant the health and safety plan for the works 3. Cooperate with the health and safety consultant in all respects 4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification 5. Conform to the conditions contained in the employer's health and safety specification <p>F:..... V:..... T:.....</p>	Item	
98	Green star building certification		
	F:..... V:..... T:.....	N/A	
99	Broad based black economic empowerment (BBBEE)		
	Tenders submitted will be evaluated taking into account their empowerment rating		
	The employer will be monitoring the broad based black economic empowerment (BBBEE) status of the contractor throughout the execution of the works		
	The contractor is to submit to the principal agent on an annual basis a schedule of spend, split into vendors engaged as subcontractors and suppliers indicating their BBBEE rating including proof of the said rating		
	F:..... V:..... T:.....	Item	
100	Advertising rights		
	The employer may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The contractor shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the principal agent so as not to hinder the contractor in meeting his obligations under this agreement		
	F:..... V:..... T:.....	Item	
	Carried Forward	R	
	<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>		

		Brought Forward	R	
101	<p>Confidentiality</p> <p>The contractor undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all subcontractors and suppliers. Such information shall not be used in any way except in connection with the execution of the works</p> <p>No information regarding this project shall be published or disclosed without the prior written consent of the employer</p> <p>F:..... V:..... T:.....</p>		Item	
102	<p>Media releases</p> <p>All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the employer</p> <p>The contractor together with his subcontractors shall not, without the prior written consent of the employer, cause any statement or advertisement connected with this project to be printed, screened or aired by the media</p> <p>F:..... V:..... T:.....</p> <p><u>NOTE:</u></p> <p>The information listed below is in respect of certain clauses in the Preliminaries, requiring the supplementary information</p>		Item	
103	<p>CLAUSE NO A24 - 3 months including public holidays and statutory builders holidays</p> <p>F:..... V:..... T:.....</p> <p>The date for site handover :- TO BE ANNOUNCED</p> <p>The contractual practical completion date is : 3 months after the date of site handover</p> <p>CLAUSE NO A1 - Clause A1 has been amended to read that construction period means the period commencing on the date on which possession of the site is given to the contractor</p>		Item	
104	<p>CLAUSE NO 24 - Amount of penalty shall be R4000 per calender day.</p> <p>F:..... V:..... T:.....</p>		Item	
		Carried Forward	R	
<p>Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries</p>				

	Brought Forward	R		
<u>SUMMARY OF CATEGORIES</u>				
Category : Fixed R.....				
Category : Value R.....				
Category : Time R.....				
Carried to Final Summary				
Section No. 1 Section 1- Preliminaries and General Bill No. 1 Preliminaries				
R				

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 1 EARTHWORKS (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary products in descriptions</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent</p> <p><u>Nature of material to be excavated</u></p> <p>The material to be excavated is assumed to be predominantly of a composition that will allow excavation in "earth" as specified, but including a percentage of excavation in "soft rock" and "hard rock"</p> <p><u>Classification of excavated material</u></p> <p>Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives.</p> <p>Soft rock" shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact oukclip and material of similar hardness.</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 1 Earthworks</p>				
			R		

	Brought Forward			R
	<p><u>Carting away of excavated material</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations, or alternatively, from stock piles situated on the building site</p> <p><u>Dewatering of excavations</u></p> <p>The Contractor shall allow for removing seepage and other water from subterranean sources from the excavations by pumping, baling or otherwise</p> <p>Accurate records of all such dewatering shall be kept to determine the total volume of water so removed and a clear distinction shall be made between water from subterranean sources and other water</p> <p><u>Density testing on filling</u></p> <p>Rates for filling, etc. shall include for all density and soil type testing to prove that the specified compaction is achieved</p> <p>When additional testing is done on instruction of the Principal Agent and these tests are successful, they will be paid for additionally</p> <p><u>CPAP WORK GROUP</u></p> <p>Unless otherwise stated all items in this bill will be Work Group 104</p> <p><u>SITE CLEARANCE, ETC</u></p> <p><u>Site clearance</u></p> <p>1 Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc m2 63</p> <p><u>Excavation in earth not exceeding 2m deep</u></p> <p>2 Reduced levels under floors m3 8</p> <p><u>EXCAVATION, FILLING, ETC OTHER THAN BULK</u></p>			
	Carried Forward			R
	<p>Section No. 2 Section 2 - External Works Bill No. 1 Earthworks</p>			

Brought Forward			R
<u>Excavation in earth not exceeding 2m deep</u>			
3	Trenches	m3	3
4	Holes	m3	23
<u>Extra over all excavations for carting away</u>			
5	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	34
<u>Risk of collapse of excavations</u>			
6	Sides of trench and hole excavations not exceeding 1,5m deep	m2	27
7	Sides of trench and hole excavations exceeding 1,5m deep	m2	104
<u>Keeping excavations free from water</u>			
8	Keeping excavations free from mud and all water other than from subterranean sources		Item
<u>FILLING, ETC</u>			
<u>Filling of G5 material supplied by the contractor, compacted to 95% Mod AASHTO density</u>			
9	Under floors, etc	m3	8
<u>Compaction of surfaces</u>			
10	Compaction of ground surface under floors, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 93% Mod AASHTO density	m2	26
<u>Prescribed density tests on filling</u>			
11	"Modified AASHTO Density" test on fill material	No	1
<u>PROTECTION AGAINST TERMITES</u>			
Carried Forward			R
Section No. 2 Section 2 - External Works Bill No. 1 Earthworks			

		Brought Forward		R
	<u>Soil insecticide</u>			
12	Under floors, etc including forming and poisoning shallow furrows against foundation walls, etc and filling in furrows and ramming	m2	26	
13	To bottoms and sides of trenches etc	m2	36	
Carried Forward to Summary of Section No. 2				R
Section No. 2				
Section 2 - External Works				
Bill No. 1				
Earthworks				

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 2 CONCRETE, FORMWORK AND REINFORCEMENT (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Proprietary products in descriptions</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent</p> <p><u>Cost of tests</u></p> <p>Descriptions of concrete items shall be deemed to include for all necessary testing of concrete components and trial mixes</p> <p>Cost of tests The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the architect. (Test cubes are measured separately)</p>				
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 2 Concrete, Formwork & Reinforcement</p>		R		

Brought Forward			R
<u>Formwork</u>			
Formwork Descriptions shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use. The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.			
Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"			
Unless otherwise described, formwork to soffits of slabs and beams shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high			
Formwork to soffits of slabs shall not exceed 250mm thick			
<u>CPAP WORK GROUP</u>			
Unless otherwise stated all items in this bill will be Work Group 110			
<u>REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES</u>			
<u>30MPa/19mm concrete</u>			
1	Bases (Provisional)	m3	9
2	Ground beam (Provisional)	m3	6
<u>REINFORCED CONCRETE</u>			
<u>30MPa/19mm concrete</u>			
3	Surface beds cast in panels on waterproofing	m3	5
Carried Forward			R
Section No. 2 Section 2 - External Works Bill No. 2 Concrete, Formwork & Reinforcement			

Brought Forward				R	
4	Slabs including landings, beams and inverted beams	m3	8		
5	Walls in foundations (Provisional)	m3	22		
<u>CONCRETE TESTING</u>					
6	Making and testing 150 x 150 x 150mm concrete strength test cube (Provisional)	No	6		
<u>CONCRETE SUNDRIES</u>					
<u>Finishing top surfaces of concrete smooth with a power float</u>					
7	Surface beds, slabs, etc	m2	36		
<u>Finishing top surfaces of concrete smooth with a wood float</u>					
8	Surface beds, slabs, etc to falls	m2	26		
<u>SMOOTH FORMWORK (DEGREE OF ACCURACY 11)</u>					
<u>Smooth formwork to sides</u>					
9	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	127		
10	Walls in foundations (Provisional)	m2	179		
<u>Smooth formwork to soffits</u>					
11	Slabs propped up exceeding 3.5m and not exceeding 5m high	m2	34		
<u>REINFORCEMENT(PROVISIONAL)</u>					
<u>High tensile steel reinforcement to structural concrete work</u>					
12	Steel reinforcing in various Diameter bars	t	4.76		
<u>Fabric reinforcement</u>					
13	Type 617 fabric reinforcement in concrete surface beds, slabs, etc	m2	26		
Carried Forward to Summary of Section No. 2				R	
Section No. 2					
Section 2 - External Works					
Bill No. 2					
Concrete, Formwork & Reinforcement					

Item No		Quantity	Rate	Amount	
1	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 3 WATERPROOFING (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Waterproofing Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs</p> <p><u>Proprietary products in descriptions</u></p> <p>Proprietary products shall be used as specified. Substitute products of similar quality and specification may only be used with prior approval by the Principal Agent</p> <p><u>CPAP WORK GROUP</u></p> <p>Unless otherwise stated all items in this bill will be Work Group 120</p> <p><u>DAMPPROOFING OF WALLS AND FLOORS</u></p> <p><u>One layer of 250 micron USB green waterproof sheeting sealed at laps with pressure sensitive tape</u></p> <p>Under surface beds</p>	m2	767		
	<p style="text-align: right;">Carried Forward to Summary of Section No. 2</p> <p>Section No. 2 Section 2 - External Works Bill No. 3 Waterproofing</p>		R		

Item No		Quantity	Rate	Amount	
1	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 4 PARKING AREA (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>NOTE:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>Testing of material and filling</u></p> <p>Descriptions of earth filling, compaction, etc shall be deemed to include for all necessary testing required in accordance with the SABS 1200 series</p> <p><u>Precast concrete block road surfacing</u></p> <p>Paving shall be laid in accordance with SABS 1200 MJ, SANS 1058 and the Concrete Masonry Association's specifications</p> <p>Clean sand shall be swept into joints between roadstones at completion where specified by the architect or engineer</p> <p><u>Excavation in earth</u></p> <p>Not exceeding 2m deep over site between buildings, retaining walls, etc to reduce levels and dispose in prescribed stock piles on site</p>	m3	148		
	<p>Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 4 Parking Area</p>		R		

Brought Forward			R
<u>Extra over all excavations for carting away</u>			
2	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m3	148
<u>Road & Parking bed preparation</u>			
3	Rip and recompact the insitu layer to a depth of 200 mm and compact to 90% Modified AASTO density at optimum moisture content	m2	741
<u>Earth filling supplied by the contractor under parking areas, roadways, etc</u>			
4	Over site of G5 material in accordance with SABS 1200, stabilised to attain CBR > 10 compacted to 93% Mod ASSHTO density	m3	111
<u>Paving to Parking, etc.</u>			
5	19mm Clean crushed stone aggregate material laid on top of compacted material all in accordance with the engineer specification	m3	37
<u>Precast concrete finished smooth on exposed surfaces, including bedding, jointing and pointing</u>			
6	75 x 150mm High kerbs (SANS 927 fig 12) with 150 x 150 x 300mm unreinforced concrete haunching at back of each joint,formed with short lengths of straight kerbs, including excavation, backfilling, etc	m	116
<u>"Hyvar X" Weedkiller (or similar approved) mixed with water and applied at a rate of 100grams/m - Provisional</u>			
7	Under paving etc	m2	741
Carried Forward to Summary of Section No. 2			R
Section No. 2			
Section 2 - External Works			
Bill No. 4			
Parking Area			

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 5 WATER SUPPLIES (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>NOTE:</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p>Tenderers are to refer to the Model Preambles for Trades (Latest Edition) and Supplementary Preambles for further description and amplification of work in this section</p>				
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 5 Water supplies</p>		R		

Brought Forward				R
<p><u>Laying, backfilling, bedding, etc of pipes</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturer's instructions</p> <p>Where no manufacturer's instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200</p> <p>L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage</p> <p>Pipe trenches, etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB: Earthworks (Pipe trenches)</p> <p>Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB: Bedding (Pipes)</p> <p>Unless otherwise described bedding of rigid pipes shall be class C bedding</p> <p><u>WATER PUMPS</u></p> <p><u>Water Pumps</u></p>				
1	Supply only 1.1kw pressure pumps to match existing (Allow PC amount of R3300 per pump)	No	10	
Carried Forward to Summary of Section No. 2				R
Section No. 2 Section 2 - External Works Bill No. 5 Water supplies				

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 6 SOIL DRAINAGE (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>Where items in this Bill are identical to those in the previous Bills, the descriptions have been shortened, and the full descriptions in the Trades concerned are to be referred to for the full meaning and intent of each item</p> <p><u>Laying, backfilling, bedding, etc. of pipes</u></p> <p>Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturers' instructions</p> <p>Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : Earthworks (Pipe trenches) Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding</p> <p><u>General:</u></p> <p>Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 98% Mod AASHTO density and disposal of surplus material on site.</p>				
	<p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 6 Soil Drainage</p>		R		

Brought Forward			R
<u>As-built drawings:</u>			
Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere).			
<u>UPVC Pipes:</u>			
1	110 mm Pipe and excavations not exceeding 1m deep	m	169
<u>Extra over for UPVC Pipe fittings:</u>			
2	110 mm Bend	No	3
3	110 mm Junction with inspection eye and lid	No	1
<u>MANHOLES</u>			
<u>Supply and install Manholes, catchpits, inspection chambers, grid inlets, etc complete</u>			
4	Brick manhole size 920 x 690 mm not exceeding 1 m deep internally formed of one brick sides of extra hard burnt semi-facebrick bricks in 1:3 cement mortar on and including 100 mm thick Reinforced concrete (Grade 25/20) bottom, rendered internally in 1:3 cement plaster with mass concrete benching (Grade 25/20) finished smooth with 25 mm thick 1:3 cement screed, 150 mm thick mass concrete slab (Grade 25/20) and kerb on top with inner edge rebated for and fitted with cover (elsewhere measured), including finishing all exposed surfaces of kerb with 1:2 cement plaster trowelled smooth, including excavation in earth, backfilling and compacting, formwork, holes through sides for pipes, etc.	No	3
<u>Gratings, covers and frames:</u>			
5	450 x 600mm Double seal manhole cover and frame	No	5
<u>SUNDRIES</u>			
<u>Sundries</u>			
6	Encase 110 mm vertical PVC bend in concrete (Class 15 MPa)	No	2
Carried Forward			R
Section No. 2 Section 2 - External Works Bill No. 6 Soil Drainage			

Brought Forward			R
7	<p><u>Testing</u></p> <p>Allow for testing all soil drainage to the satisfaction of the Quantity Surveyor. All defective work is to be taken out and replaced at the Contractor's expense</p>	Item	
Carried Forward to Summary of Section No. 2			R
<p>Section No. 2 Section 2 - External Works Bill No. 6 Soil Drainage</p>			

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 2</u></p> <p><u>BILL NO. 7 FENCING (PROVISIONAL)</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>1. Flatwrap wire and clips to be "Aluzink" coated</p> <p><u>Clearing of site:</u></p> <p>1 Allow for clearing site for the width of 1,000 mm where fencing runs are to be erected including removing trees, shrubs etc. not exceeding 200mm girth, grubbing up roots and roughly levelling (provisional) m 116</p> <p><u>Galvanised security fence with galvanised steel pipe posts, stays, gates, etc including galvanised steel bolts, straining eye bolts, etc, site clearance and preparation of ground</u></p> <p>2 Fencing formed of 50 x 50 x 3.14mm diameter galvanised weld mesh 1800mm high with vertical wires facing outwards secured with "Howgring" clips or 2mm galvanised binding wire at 300 mm centres to top and bottom straining wires and 700 mm centres to four intermediate straining wires (straining wires elsewhere measured) including holes through posts. m 116</p> <p>3 Five strands of 4mm galvanised straining wires secured to fencing posts with doubled 2mm galvanised wire inserted through hole in post and turned a minimum of four turns around straining wire and attached to straining frame at one end with not less than four turns and the other end to straining bolts (elsewhere measured). m 578</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 2 Section 2 - External Works Bill No. 7 Fencing</p>				
			R		

Brought Forward			R
4	75mm Diameter galvanised steel intermediate fencing post, 2400mm long fitted with a pressed steel mushroom cap, post fitted with 300 x 300 x 6mm flange plate welded to bottom and embedded in 300 x 300 x 600mm mass concrete (25 MPa) base including all necessary excavation, disposal, etc	No	40
5	100mm Diameter galvanised straining post 2800mm long, fitted with two 50mm diameter x 2400mm long galvanised steel stays set raking and with top end flattened and twice bolted through post with M8 galvanised bolts with post embedded in 500 x 500 x 800mm mass concrete (25 MPa) bases and stay embedded in 500 x 500 x 500mm mass concrete (25 MPa) bases (Provisional) including all necessary excavation, disposal, etc.	No	2
6	100mm Diameter gate post 2800mm long fitted with one 50mm diameter galvanised steel raking stay 2400mm long, with post embedded in 500 x 500 x 800mm mass concrete (25 MPa) bases and stay embedded in 500 x 500 x 500mm mass concrete (25 MPa) bases (Provisional) including all necessary excavation, disposal, etc.	No	4
7	150mm Diameter galvanised corner post 2800mm long, fitted with two 50mm diameter x 2400mm long galvanised steel stays set raking and with top end flattened and twice bolted through post with M8 galvanised bolts with post embedded in 500 x 500 x 800mm mass concrete (25 MPa) bases and stay embedded in 500 x 500 x 500mm mass concrete (25 MPa) bases (Provisional) including all necessary excavation, disposal, etc.	No	4
<u>Hot Dipped Galvanised Steel Gates:</u>			
8	Double swing gate size 5000 x 1800mm high formed of 50mm diameter x 3.14mm thick frame, with two 50 x 3.14mm diagonal infill supports on each leaf , the whole gate fitted inside 50 x 50 x 3.14mm welded mesh, with two 50mm diameter x 150mm long pin hinges on each gate leaf complete with two 55 x 40 x 8mm padlock plates for locking all in accordance to engineers drawing no 2000140-C-155 attached at the back of these bills of quantities	No	2
Carried Forward			R
Section No. 2 Section 2 - External Works Bill No. 7 Fencing			

		Brought Forward			R
9	<p><u>Sundries:</u></p> <p>12 mm Diameter galvanised mild steel straining eye bolt with hook, threaded portion and two nuts and washers, including hole through post.</p>	No	70		
<p>Carried Forward to Summary of Section No. 2</p> <p>Section No. 2 Section 2 - External Works Bill No. 7 Fencing</p>				R	

Bill No	Section No. 2 Section 2 - External Works <u>SECTION SUMMARY - Section 2 - External Works</u>	Page No		Amount
1	Earthworks	172		
2	Concrete, Formwork & Reinforcement	175		
3	Waterproofing	176		
4	Parking Area	178		
5	Water supplies	180		
6	Soil Drainage	183		
7	Fencing	186		
	Carried to Final Summary		R	
	Section No. 2 Section 2 - External Works			

Item No		Quantity	Rate	Amount	
	<p><u>SECTION NO. 3</u></p> <p><u>BILL NO. 1 PROVISIONAL SUMS</u></p> <p><u>PREAMBLES</u></p> <p>Tenderers are referred to the relevant clauses in the Model Preambles for Trades (2017 Edition) as published by the Association of South African Quantity Surveyors and Supplementary Preambles for further description and amplification of work in this section</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p>All prime cost amounts and provisional sums are net and include for delivery to site of all articles concerned</p> <p>Unless a specific percentage mark up for attendance is indicated in the rate column, the amounts priced by the contractor for attendance against each Provisional Sum shall be deemed to be Lump Sum and shall not be adjusted unless the scope of the sub-contract varies significantly.</p> <p style="text-align: right;">Carried Forward</p> <p>Section No. 3 Section 3 - Provisional Sums Bill No. 1 Provisional sums</p>				
			R		

Brought Forward		R
<p><u>Attendance upon sub-contractors</u></p> <p>The item "Allow for attendance" following each provisional sum is for costs incurred by the Contractor in providing free of charge to the Sub-contractor the following :</p> <ol style="list-style-type: none"> 1. Services as set out in clause B10 of the preliminaries 2. Hoisting of Selected Sub-contractor's material where required 3. Casing and protection of the Selected Sub-contractor's work after completion thereof 4. Making good in all trades and final cleaning down on completion only 5. Every facility to enable the Selected Sub-contractor to carry out his work in a workmanlike manner in proper order and sequence 6. Reasonable site security measures 7. Programming and co-ordination of the works including obtaining all necessary particulars of Selected Sub-contractor's work timeously <p>Loss of profit: Should any of the specialist items listed in this Bill be substantially reduced or omitted, no claim for "loss of profit" on any of the specialists listed, will be considered</p> <p><u>ALLOW THE FOLLOWING NET PROVISIONAL SUMS</u></p> <p><u>FURNITURE</u></p> <ol style="list-style-type: none"> 1 Provide the sum of R750 000.00 (Seven Hundred and Fifty Thousand Rand) for Farm Furniture to be executed by a selected sub contractor to be appointed by the Principal Agent. 2 Profit on above item. 3 Attendance on ditto. 		
	Item	750 000.00
	Item	
	Item	
Carried to Final Summary		R
<p>Section No. 3 Section 3 - Provisional Sums Bill No. 1 Provisional sums</p>		

Section No	<u>FINAL SUMMARY</u>	Page No		Amount
1	Section 1- Preliminaries and General	168		
2	Section 2 - External Works	187		
3	Section 3 - Provisional Sums	189		
	Sub Total		R	
	<u>CONTINGENCIES</u>			
	Allow the sum of R100 000.00 (One Hundred Thousand Rand) for Contingencies to be used or deducted in full at the approval of the client		R	100 000.00
	ADDValue Added Tax (15%)		R	
	Carried to Combined Projects Final Summary		R	

COMBINED PROJECTS FINAL SUMMARY (EIKENHOFF & NORTHERN FARM)
(Independently numbered)

COMBINED PROJECTS FINAL SUMMARY

01 NORTHERN FARM (VAT INCL)

R

-

02 EIKENHOFF FARM (VAT INCL)

R

-

Total Carried to form of tender

R

-

PART C3: SCOPE OF WORK

C3.1. Description of the Works

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- C3.1.2. Overview of the works
- C3.1.3. Location of the works
- C3.1.4. Temporary works
- C3.1.5. Access and working areas

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- C3.2.1. Design services and activity matrix
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- C3.2.3. Design brief
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C3.5. Management

- C3.5.1. Health and safety specification
- C3.5.2. Environmental specifications

PART C3: SCOPE OF WORK

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 Employer's objectives

The Johannesburg Development Agency has been appointed by the City of Johannesburg for the implementation of the Construction Works at Eikenhoff & Nothern Farm.

This contract is for the **Construction works at Eikenhoff & Nothern Farms**

The Johannesburg Development Agency (JDA)'s objective is to construct a septic tank, fencing and parking area at Eikenhoff Farm and Borehole drilling and Equipping and electrical installation at Northern Farm.

The Project will seek to:

- Enhance the functionality of the farms by providing electricity, water, etc
- Support local economic development including local SMMEs
- Encourage further investment and upgrading in the area
- Promote improved social cohesion

C3.1.2 Overview of the works

In general the scope of works is envisaged to comprise of the construction of a septic tank, fencing and parking area at Eikenhoff Farm and Borehole drilling and Equipping and electrical installation at Northern Farm.

C3.1.3 Location of the works

The site is situated on:

Eikenhoff Farm (Latitude: 26°20'14.78"S, Longitude: 28°0'39.89"E) Johannesburg South Along Klipriver Road.

Northern Farm (Latitude: 25.951004°S, Longitude: 27.996722°E) Diepsloot along R114 highway

C3.1.4 Temporary works

The contractor is to design, supply, construct, demolish and spoil at his own cost any temporary works required for the construction of the works.

As the works are to be constructed within a built-up urban area, the Contractor will be required to carry out all temporary works that will be necessary to maintain the flow of traffic and to ensure that pedestrian and vehicular access is maintained to local residential buildings and businesses.

C3.1.5 Access and working areas

Access to the site is on Klipriver Road for Eikenhoff and R114 highway for Northern Farm.

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 tendered 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.

C3.2 ENGINEERING

C3.2.1 Design Services & Activity Matrix

The following parties are responsible for the various design stages of the project.

DESCRIPTION	RESPONSIBLE
Concept, feasibility and overall process	Employers Agents / Professional Team
Basic Principal Agent and Preliminary Design	Employers Agents / Professional Team
Final design to approval for construction stage	Employers Agents / Professional Team
Temporary Works	Contractor
Preparation of as built drawings	Employers Agents / Professional Team / Contractor

C3.2.2 Employers Design

All permanent works required for construction shall be designed by the employer and his appointed agents / professional team.

C3.2.3 Design Brief

The Employer has briefed the consultants as to the design requirements.

C3.2.4 Drawings

The drawings are attached to this document. The drawings included with the tender document are for information and tender purposes only. Detail construction drawings will be issued to the contractor at site handover and revisions thereto during the construction stage of the project.

The following drawings are applicable to the contract:

Refer to drawings attached.

The Contractor will be supplied with three (3) copies of each of the construction drawings. These copies will be issued free of charge and the contractor shall make any additional prints he may require at his own cost.

Only figured dimensions shall be used and drawings are not to be scaled unless so instructed by the principal agent. The principal agent will supply any figured dimensions, which may have been omitted from the drawings.

All drawings and documents are to be considered the sole property of the Consultants and are to be returned to them on completion of the Works.

The drawings, etc., are to be used by the Contractor for the purpose of this Contract only. All drawings must be properly cared for, protected and kept in good condition.

Should any part or parts of the Drawings, Specifications or Bills of Quantities not be clearly intelligible to the Contractor, or the material or articles to be used in the execution of the Works be considered insufficiently described or the manner in which the work is to be carried out not be clear, the Contractor must obtain from the Principal Agent the necessary information to clarify such Drawings, Specification, Bills of Quantities or instructions which request shall be in writing.

The Contractor shall be held solely responsible for and shall, at his own expense, rectify any errors arising out of incorrect interpretation of the Drawings, Specifications, Bills of Quantities or instructions.

Upon receipt of detail drawings for any work, the Contractor shall, before putting that work in hand, ascertain that the dimensions given on the detail drawings correspond with the dimensions of any work already built and which governs the sizes of any work for which details are now issued.

In the event of the detail drawings not agreeing with the works already built, the discrepancy shall be brought to the Principal Agent's attention timeously and the detail drawings shall be returned at once for alterations.

All dimensions will be figured on the drawings or may be calculated from figured dimensions and are always to be followed. No dimensions shall be obtained by scaling.

C3.2.5 Design Procedures

Where the Contractor is required to design any sub-contract or specialist works, the relevant professional indemnity must be taken out at the contractor's costs. All shop drawings must be issued timeously for approval by the Principal Agent. A late issue of shop drawings by the Contractor will not constitute a valid claim for extension of time.

C3.3 PROCUREMENT

C3.3.1 Requirements

The contractor shall be required to adopt labour-based techniques through the full spectrum of the works with the proviso that the Client's specific objectives regarding time and quality are not compromised. Maximisation of employment shall be of the essence on this contract.

Together with their tenders, all Tenderers are required to submit a comprehensive implementation plan clearly stating the labour content and number of jobs that shall be created. The employment of labour shall be reflected in a programme in sufficient details to enable the Project Manager to monitor and compare it with the implementation plan.

The Contractor shall be required to submit employment data on a monthly basis to the Project Manager.

Tenderers are to also note that it is an explicit condition of this tender that all unskilled labourers on the Project are to be employed from the local community. The Contractor shall, in general, maximise the involvement of the local community.

C3.3.2 Small Contractor Development

C3.3.2.1 Definitions and Applicable Legislation

(A) Definitions

Unless inconsistent with the context, in these specifications the following terms, words or expressions shall have the meanings hereby assigned to them:

Start-up Enterprises

An enterprise that has been in existence and operating for less than two years.

Small Enterprises

An enterprise that has a CIDB grading designation of 1 or 2.

Micro Enterprises

An enterprise that has a CIDB grading designation of 3.

Locally based SMMEs

Enterprises that have their operational base in the ward in which the Project is to be executed or, alternatively, the members of the enterprise are resident in the particular ward.

Should suitable locally based SMME contractors as defined above not be available in the particular ward, then they shall be sourced from adjacent wards.

Black Business Enterprise

Black Business Enterprise is a legal entity which adheres to statutory labour practices, is registered with SARS and is a continuing and independent Enterprise, providing a Commercially Useful Function:

- a) Whose management and daily business operations are in the control of one or more Black Persons, and
- b) Which is at least 50,1% owned by one or more Black Persons who are Principals.”

Contract Participation

Contract Participation in terms of this contract is a process by which the Employer implements Government’s objectives by setting a target relating to small contractor development which the Contractor shall achieve as a minimum.

Contract Participation Goal (CPG)

Contract Participation Goal is the monetary value of the target set by the Employer in the Contract Participation process.

Contract Participation Performance (CPP)

Contract Participation Performance is the measure of the Contractor’s progress in achieving the CPG.

(B) Applicable Legislation

The following Acts, as amended from time to time, are predominant amongst those which apply to the construction industry and are listed here for reference purposes only:

- The Constitution of South Africa;
- Preferential Procurement Policy Framework Act No. 5 of 2000;
- Construction Industry Development Board Act No. 38 of 2000;
- Broad-Based Black Economic Empowerment Act No. 53 of 2003.

C3.4 CONSTRUCTION

C3.4.1 Works specifications

Applicable national and international standards

For preambles refer to “General Specification of Materials and Methods used for Building Contracts” (GP/ASC)

Particular / generic specifications

Works are to be carried out in accordance with the construction drawings and according to the Johannesburg Development Agency, Johannesburg Roads Agency and City of Johannesburg’s norms and standards.

Certification by recognized bodies

None Applicable.

C3.4.2 Plant and Materials

The contractor shall ensure that adequate plant and materials are procured at his own cost and available as required in order to complete the works as specified in line with the contract programme. The contractor shall supply a report to the Principal Agent on a fortnightly basis as to the plant and materials on site (or on order), and their utilization in relation to the construction programme.

There is no guarantee given or implied that the Contractor will be permitted to utilise any or all of the plant he proposes to use in the construction of the Works.

C3.4.3 Construction Equipment

The contractor shall ensure that adequate construction equipment is available at his own cost as required in order to complete the works as specified in line with the contract programme. The contractor shall supply a report to the Principal Agent on a fortnightly basis as to the construction equipment on site and their utilization in relation to the construction programme.

There is no guarantee given or implied that the Contractor will be permitted to utilise any or all of the equipment he proposes to use in the construction of the Works.

C3.4.4 Existing Services

All known existing services and those services which require relocation and protection, are shown on the services plans. The Contractor’s attention is drawn to the fact that such services information is based on information supplied by others, and accuracy and completeness of this information has not been confirmed. The contractor will therefore be required to proceed with extreme caution in order to avoid damage to existing services.

In general, the engineer may call upon the contractor to re-excavate trenches previously dug and backfilled by others where in the opinion of the engineer such work is necessary to ensure the stability of any other works over such trenches. This in no way relieves the contractor of his responsibilities in term of the works.

C3.4.5 Site Establishment

The Contractor shall make available temporary facilities necessary for providing the works which are not provided by the Employer including telecommunications, security services, medical, fire protection, sanitation and toilets, waste disposal, etc.

The contractor shall not make any changes to the senior management relative to the agreement without the principal agent's express written approval.

Services and Facilities Provided by the Employer:

- Nil

Facilities Provided by the Contractor:

- The contractor is to provide facilities, necessary to complete the project as specified.
- The contractor is to provide suitable hoarding to the entire site for the entire duration of the project to meet the Principal Agent's requirements. Including any necessary making good upon completion.

Storage and Laboratory Facilities:

- The contractor is to provide facilities, necessary to complete the project as specified.

Other Facilities and Services:

- The contractor is to provide facilities, necessary to complete the project as specified.

Vehicles and Equipment:

- The contractor is to provide vehicles and equipment necessary to complete the project as specified.

Advertising Rights:

- The contractor may not place any advertising boards or the like on the site or in any public area without the express written permission of the employer.

Notice Boards:

- The contractor must place a contract notice board outside his site camp as specified by the employer.

Office Accommodation for Meeting Room:

- The contractor must provide a meeting room to accommodate a maximum of 20 people. The meeting room is to be air-conditioned.
- The contractor must provide an air-conditioned office space for the engineers for construction monitoring.

C3.4.6 Site Usage

The contractor will have unlimited access to the site, however all construction activities are to comply with the City of Johannesburg's by laws. The accommodation of vehicular and pedestrian traffic on the site is to be maintained at all times.

The contractor is to allow for the accommodation and diversion of pedestrian traffic in his preliminaries & general items all in accordance with the South African Road Traffic Signs Manual, The Occupational Health & Safety Act & The Construction Regulations as amended, including on-going liaison with the traffic authorities and management of traffic, alterations to kerbing and landscaping, barricading road entrances, temporary signage, dust screens,

painting of lines, etc. The traffic accommodation proposal shall be approved by the Principal Agent prior to the execution of the works.

The contractor is to maintain temporary accesses to all businesses during business hours and to all residential properties outside of business hours. In the event that the contractor cannot maintain access to residents' properties for vehicular parking and the like, the contractor is to provide alternative secure parking for residents at his own cost. Similarly, should residents be forced to park on the street due to construction activities, the contractor shall provide security personnel to guard the resident's vehicles.

The cost hereof shall be included in the contractor's preliminaries & general items.

C3.4.7 Permits and way leaves

Way leaves shall be supplied by the contractor. Contractors are to comply with the terms and conditions of the way leaves as supplied by the various service provider departments.

C3.4.8 Alterations, additions, extensions and modifications to existing works

Care must be taken not to affect the structures stability and props must be installed if there is any doubt as to the structural integrity of the building. All rubble must be removed in a manner acceptable to the Principal Agent.

The works at tender stage are not finalised and are subject to change.

The Architect will prepare a handover document including photographs of the existing building.

C3.4.9 Inspection of Adjoining Properties

Contractors are to ensure that adequate inspections of adjoining properties are carried out (and records are kept thereof) to ensure that any claims received from adjoining properties due to damage can be dealt with decisively. The settlement of any claims in this regard shall be dealt with in terms of the policies in place by the City of Johannesburg. Photographs must be taken to document the inspection.

C3.4.10 Water and Electricity for Construction Purposes

The cost for temporary water and electricity would be for the contractor's account.

C3.4.11 Survey Control and setting out of the works

By the Contractor

C3.4.12 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

(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 Principal Agent in deciding whether the quality of materials utilised and workmanship achieved by the Contractor comply with the requirements of the Specifications. .

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 Principal Agent 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" 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) Costs of Testing

(a) Costs of Testing

The costs of all testing carried out by the independent laboratory shall be borne by the Contractor and shall be deemed to be included in the bided 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.

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 (e.g. re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

(b) Additional Tests Required by the Principal Agent

Additional testing required by the Principal Agent, 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 Principal Agent, 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 Principal Agent and the

Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Principal Agent 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 Principal Agent will not become involved.

C3.5 MANAGEMENT

C3.5.1 HEALTH AND SAFETY SPECIFICATIONS

This part of C3.5 Management contains specifications for Health and Safety matters not covered by C3.4 Construction Specifications.

The number of each clause in this specification is prefixed with an E to differentiate these clauses and items.

SECTION E1000: HEALTH AND SAFETY REQUIREMENTS

E1001 SCOPE

This health and safety specification establishes the overarching framework within which a contractor is required to satisfy general requirements for occupation health and safety in an engineering and construction works contract.

Note: (1) This specification establishes general requirements to enable the employer and the contractor to satisfy the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2014.

(2) The Construction Regulations, 2014, require an employer to stop any contractor from executing construction work which is not in accordance with the contractor’s health and safety plan for the site or which poses a threat to the health and safety of persons.

E1002 DEFINITIONS

Act: the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

competent person: any person having the knowledge, training and experience specific to the work or task being performed.

ergonomics: 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.

hazard: a source of or exposure to danger.

incident: an event or occurrence occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which:

- (a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he 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 to continue with the activity for which he was employed or is usually employed;
- (b) a major incident occurred; or

- (c) the health or safety of any person was endangered and where:
- (i) a dangerous substance was spilled;
 - (ii) the uncontrolled release of any substance under pressure took place;
 - (iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or machinery ran out of control.

health and safety plan: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

health and safety specification: 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.

inspector: a person designated as such under section 28 of the Act.

major incident: an occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace.

reasonably practicable: practicable having regard to:

- (a) the severity and scope of the hazard or risk concerned;
- (b) the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk;
- (c) the availability and suitability of means to remove or mitigate that hazard or risk; and
- (d) the cost of removing or mitigating that hazard or risk in relation to the benefits deriving therefrom.

risk: the probability that injury or damage will occur.

safe: free from any hazard.

scaffold: any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both.

specification data: data, provisions and variations that make this specification applicable to a particular contract.

Structure:

- (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.

substance: any solid, liquid, vapour, gas or aerosol, or combination thereof.

suitable: capable of fulfilling or having fulfilled the intended function or fit for its intended purpose.

E1003 INTERPRETATION

E3.1 The Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this specification.

E3.2 Compliance with the requirements of this specification does not necessarily result in compliance with the provisions of the Act.

E1004 REQUIREMENTS

E4.1 General requirements

- E4.1.1 The contractor shall execute the works in a manner that complies with all the requirements of the Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring.
- E4.1.2 The contractor shall with respect to the site and the engineering and construction works that are contemplated:
 - a) Identify the hazards and evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the Act
 - b) As far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.
- E4.1.3 The contractor shall as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with the respect to those hazards.

- E4.1.4 The contractor shall ensure that all employees under his or her control are:
- (a) 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
 - (b) issued with proof of health and safety induction training issued by a competent person and carry proof of such induction when working on site.
- E4.1.5 The contractor shall not allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.
- E4.1.6 The contractor shall ensure that each visitor to a construction site, save where such visitor only visits the site office and is not in direct contact with the construction work activities:
- (a) Undergoes health and safety instruction pertaining to the hazards prevalent on the site; and
 - (b) Is provided with the necessary personal protective equipment.
- E4.1.7 The contractor shall provide suitable on-site signage to alert workers and visitors to health and safety requirements.
- E4.1.8 The contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

E4.2 Health and safety representatives

- E4.2.1 The contractor shall appoint in writing one health and safety representative for every 50 employees of the contractor working on the site, whenever there are more than 20 employees on the site; to:
- (a) review the effectiveness of health and safety measures;
 - (b) identify potential hazards and potential major incidents;
 - (c) in collaboration with his employer, examine the causes of incidents;
 - (d) investigate complaints by any employee of the contractor relating to that employee's health or safety on the site;
 - (e) make representations to the contractor on matters arising from a), b), c) or d) or on general matters affecting the health or safety of the employees at the workplace;
 - (f) inspect the site with a view to the health and safety of employees, at regular intervals;
 - (g) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace; and
 - (h) participate in any internal health or safety audit.

- E4.2.2 The contractor shall inform the relevant safety representative:
- (a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and
 - (b) as soon as reasonably practicable of the occurrence of an incident on the site.
- E4.2.3 The contractor shall convene health and safety meetings whenever more than two health and safety representatives have been appointed for the site. These meetings shall be attended by all health and safety representatives and shall be convened at least once every month to:
- (a) make recommendations to the employer regarding any matter affecting the health or safety of persons on the site; and
 - (b) discuss any incident on the site in which or in consequence of which any person was injured, became ill or died.
- E4.2.4 The contractor shall consult with the health and safety committee on the development, monitoring and review of the risk assessment.

E4.3 Appointment of construction supervisor and safety officers

- E4.3.1 The contractor shall appoint a full-time competent employee designated in writing as the construction supervisor for the site, with the duty of supervising the performance of the work falling within the scope of the contract and may appoint one or more competent employees to assist the appointed construction supervisor.
- E4.3.2 A contractor may 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, who has in the contractor's opinion the necessary competencies and resources, to assist the contractor in the control of all safety related aspects on the site.
- E4.3.3 The contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the fall protection plan.
- E4.3.4 The contractor shall ensure that the construction supervisor is in possession of the most recently updated version of the fall protection plan.
- E4.3.5 The contractor shall ensure that the following activities, as relevant, are carried out under the supervision of a competent person and that such persons are appointed in writing:
- (a) all formwork and support work operations;
 - (b) excavation work;
 - (c) demolition work;
 - (d) scaffolding work operations;
 - (e) suspended platform work operations;
 - (f) operation of batch plants; and

- (g) the stacking and storage of articles on the site.

E4.4 Risk assessment

E4.4.1 The contractor performing work falling within the contract shall, before the commencement of any such work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing. Such an assessment shall as a minimum:

- (a) identify the risks and hazards to which persons may be exposed to;
- (b) analyse and evaluate the identified risks and hazards;
- (c) document a plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- (d) provide a monitoring plan; and
- (e) provide a review plan.

Note: A risk assessment is an important step in protecting workers as well as complying with the law. It helps you focus on the risks that really matter in a particular workplace – the ones with the potential to cause real harm. Workers and others have a right to be protected from harm caused by a failure to take reasonable control measures. The following four steps are recommended:

Identify the hazards by looking at what could reasonably be expected to cause harm, ask employees or their representatives what they think, obtain advice from trade associations or publications on health and safety, check manufacturer’s instructions or data sheets for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective, review accident and ill-health records, think about long-term hazards to health (e.g. high levels of noise or exposure to harmful substances) as well as safety hazards etc.

Identify who may be harmed and how by identifying how groups of people might be harmed i.e. what type of injury or ill health might occur.

Evaluate the risks and decide on precautions by doing everything ‘reasonably practicable’ to protect people from harm i.e. by looking at how things are done, what controls are in place and how the work is organised and comparing this against good practice to see if more can be done to bring practices up to standard. Consider if the hazard can be got rid of all together, and if not how can the risks be controlled so that harm is unlikely, e.g. try a less risky option (e.g. switch to using a less hazardous chemical); prevent access to the hazard (e.g. by guarding); organise work to reduce exposure to the hazard (e.g. put barriers between pedestrians and traffic); issue personal protective equipment (e.g. clothing, footwear, goggles etc.); and provide welfare facilities (eg first aid and washing facilities for removal of contamination).

Record the findings by writing down the findings of the risk assessment.

E4.4.2 The contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

E4.4.3 The contractor shall require a competent person to prepare a fall protection plan in compliance with the requirements of the Construction Regulations.

- E4.4.4 Notwithstanding the provisions of the fall protection plan, 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 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; fall arrest equipment is only used where it is not reasonably practicable to use fall prevention equipment; and
 - (e) suitable and sufficient steps are 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.

E4.4.5 Where roof work is being performed on a construction site, the contractor shall ensure that it is indicated in the fall protection plan that:

the roof work has been properly planned;

the roof erectors are competent to carry out the work;

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;

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;

the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;

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 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.

E4.4.6 The 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;
- (b) no structure or part of a structure is loaded in a manner which would render it unsafe; and

- (c) specification data prepared by the designer of the structure is taken into account in the risk assessment;

Note: The specification data provided by the designer should outline known or anticipated dangers or hazards relating to the works and make available all information required for the safe execution of the work. It should provide as relevant, geotechnical information (or make reference to reports provided in the site information), the loading the structure is designed to withstand, the methods and sequence of construction.

E4.5 Health and safety plans

E4.5.1 The contractor shall prior to commencing the works to which this specification applies, submit to the employer for approval a suitable and sufficiently documented health and safety plan, based on this specification and the risk assessment that is conducted.

E4.5.2 The health and safety plan shall as a minimum provide:

- (a) the information contained in Table 1 in respect of each of the hazards associated with work falling within the scope of the contract (see Figure 1); and

Table 1: Example of the format of a health and safety plan

What are the hazards?	Who might be harmed and how?	What are the safe work procedures for the site?	What further action is necessary (monitoring and review)?	Action by whom	Action by when

- (b) an outline of the manner in which the contractor intends complying with the requirements of this specification.

E4.5.3 The contractor shall discuss the submitted health and safety plan with the employer’s representative, modify such plan in the light of the discussions and resubmit the modified plan for approval.

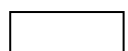
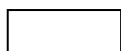
E4.5.4 The contractor shall apply the approved health and safety plan from the date of commencement of and for the duration of the works to which this specification applies.

E4.5.5 The contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the employer, but at least once every month.

E4.5.6 The contractor shall update the health and safety plan whenever changes to the works are brought about.

E4.6 Subcontractors

E4.6.1 The contractor may only subcontract work in terms of a written subcontract and shall only appoint a Sub-contractor should he be reasonably satisfied that such a Sub-contractor has the necessary competencies and resources to perform the work falling within the scope of the contract safely. Such a subcontract shall require that the Sub-contractor shall:



- (a) co-operate with the contractor as far as is necessary to enable both the contractor and Sub-contractor to comply with the provisions of the Act; and
 - (b) as far as is reasonably practicable, promptly provide the contractor with any information which might affect the health and safety of any person at work carrying out 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.
- E4.6.2 The contractor shall provide any Sub-contractor who is submitting a tender or appointed to perform a sub-contract falling within the scope of the contract, with the relevant sections of this specification and associated specification data which might be pertinent to the sub-contract.
- E4.6.3 The contractor shall take reasonable steps as are necessary to ensure:
- (a) co-operation between all Sub-contractors to enable each of those Sub-contractors to comply with the requirements of the Act and associated regulations; and
 - (b) that each Sub-contractor's health and safety plan is implemented.
- E4.6.4 The contractor shall conduct periodic audits for compliance with the approved health and safety plan of each and every Sub-contractor working on the site at intervals agreed upon with such contractors, but at least once per month.
- E4.6.5 The contractor shall stop any contractor from executing construction work which is not in accordance with the contractor's or Sub-contractor's health and safety plan for the site or which poses a threat to the health and safety of persons.
- E4.6.6 The contractor shall ensure that where changes to the works occur, sufficient health and safety information and appropriate resources are made available to the Sub-contractor to execute the work safely.
- E4.6.7 The contractor shall ensure that:
- (a) every Sub-contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site.
 - (b) potential Sub-contractors submitting tenders have made provision for the cost of health and safety measures during the construction process; and
 - (c) every Sub-contractor has in place a documented health and safety plan prior to commencing any work on site which falls within the scope of the contract.
- E4.6.8 The contractor shall receive, discuss, and approve health and safety plans submitted by Sub-contractors.
- E4.6.9 The contractor shall ensure that all Sub-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.
- E4.6.10 The contractor shall reasonably satisfy himself that all employees of Sub-contractors 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. The contractor shall satisfy himself and ensure that all Sub-contractor employees deployed in the site are:

- a) 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; and
- b) issued with proof of health and safety induction training issued by a competent person and carry proof such induction when working on site.

E4.7 Reporting of incidents

The contractor shall notify the employer's representative of any incident as soon as possible after it has occurred and report such incidence to an inspector.

E4.8 Administration

E4.8.1 Notification of intention to commence construction work

The contractor shall notify the Provincial Director of Labour in writing using a form similar to that contained in Annexure A of the Construction Regulations issued in terms of the Act before construction work commences and retain a copy of such notification in the health and safety file where such work:

involves the demolition of a structure exceeding a height of 3m;

involves the use of explosives to perform construction work;

involves the dismantling of fixed plant at a height greater than 3m;

exceeds 30 days or will involve more than 300 person days of construction work; and includes:

- (a) excavation work deeper than 1m; or
- (b) working at a height greater than 3 m above ground or a landing.

E4.8.2 Health and safety file

E4.8.2.1 The contractor shall maintain on site a health and safety file on site which contains copies of the following, as relevant:

- (a) the notification made to the Provincial Director of Labour in terms of 4.4.1;
- (b) the letters of appointment of health and safety representatives;
- (c) the minutes of all health and safety meetings;
- (d) a comprehensive and updated list of all the Sub-contractors (nominated, selected or domestic) employed on site by the contractor, indicating the type of work being performed by such Sub-contractors;
- (e) a copy of each and every subcontract agreement;.
- (f) the contractor's health and safety plan;
- (g) the health and safety plans of all the contractor's Sub-contractors who are required to provide such plans;

- (h) the recommendations made to the contractor by the health and safety committee referred to in 4.2.3
- (i) any report made to an inspector by the health and safety committee referred to in 4.2.3; and
- (j) the findings of all audit reports made regarding the implementation of the contractor's or a Sub-contractor's health and safety plan;
- (k) proof that the contractor and every Sub-contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer;
- (l) the inputs of the safety officer, if any, into the health and safety plan;
- (m) a copy of risk assessments made by competent persons;
- (n) details of induction training conducted whenever it is conducted;
- (o) proof of all Sub-contractor's induction training whenever it is conducted;
- (p) letters of appointments for competent persons to supervise prescribed activities;
- (q) proof of the following where suspended platforms are used:
 - (i) a certificate of system design issued by a professional engineer, professional certificated engineer or a professional engineering technologist;
 - (ii) proof of competency of erectors;
 - (iii) proof of compliance of operational design calculations with requirements of the system design certificate;
 - (iv) proof of 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;
 - (vii) procedures for and records of maintenance work having been carried out;
 - (viii) proof that the prescribed documentation has been forwarded to the provincial director;
- (r) records of the register of inspections made by a competent person immediately before and during the placement of concrete or any other load on formwork; and
- (s) the names of the first aiders on site and copies of the first aid certificates of competency.

E4.8.2.2 The health and safety file shall be made available for inspection by any inspector, Sub-contractor, employer's representative, employer's agent, health and safety representative or employee of the contractor upon the request of such persons.

E4.8.2.3 The contractor shall hand over the health and safety file to the employer upon completion of the contract together with a record of all drawings, designs, materials used and other similar information concerning the completed structure.

E4.9 First aid, emergency equipment and procedures

The contractor shall where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The contractor shall ensure that where there are more than 10 employees employed on the site that for every group of up to 50 employees at that workplace, at least one person is readily available during normal working hours, who is in possession of a valid certificate of competency in first aid.

C3.5.2 ENVIRONMENTAL SPECIFICATIONS

This part of C3.5 Management contains specifications for Environmental matters not covered by C3.4 Construction Specifications.

The number of each clause in this specification is prefixed with an F to differentiate these clauses and items.

SECTION F1000 : ENVIRONMENTAL MANAGEMENT

F1001 SCOPE

The Contractor is required to comply with the requirements of the detailed EMP throughout construction.

The following are standardised additional specifications applicable. They are intended to assist the appointed Contractors to fulfill the environmental requirements of the Project. The objective of the EMP is to ensure that the potential impacts upon the environment are minimised, and that upon completion of each section of work the area is left in a clean and sustainable condition.

Overall the environmental impacts of the Project are considered to be low as long as the listed procedures are followed. These are given in the EMP.

The Contractor is advised that there are cost implications to the EMP and these must be factored into the tendered price.

F1002 ENVIRONMENTAL MANAGEMENT PLAN

F2.1 Objectives

The prime objective of the EMP is to minimise or avoid significant environmental impacts by using a pro-active approach and planning procedures.

The second objective is to have a plan in place to rehabilitate areas that have been impacted upon and, thirdly,

To have a plan in place for emergency situations that arise and are detrimental to the environment e.g. fuel or bitumen spills.

The Contractor will be responsible for the day-to-day implementation of the EMP, by himself and all other Sub-contractors. During the course of construction regular compliance audits will be undertaken. This environmental auditing will be conducted by qualified environmental practitioners.

F2.2 Environmental Control

The Contractor will oversee the environmental aspects of the construction phase of the Project in consultation with the Engineer.

The Contractor will report back to the bi-weekly site meetings with regards to compliance to the environmental specifications.

F2.3 Environmental Awareness Programme

The Engineer will implement an Environmental Awareness Programme for the Contractor, his staff, Sub-contractors and all people working on the Project. The initial session will be immediately prior to construction commencing.

F2.4 Method Statements

The Contractor shall submit written method statements for activities that are identified by the Engineer, as being potentially harmful to the environment, or for work that is to be undertaken in areas identified as being environmentally sensitive.

Such activities include dewatering of excavations, pumping, working with cement, erection of construction camps and fuel stores, etc.

The Method Statement shall cover applicable details with regard to:

- construction procedures,
- materials and equipment to be used,
- getting the equipment to and from site,
- how the equipment/ material will be moved while on site,
- how and where material will be stored,
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur,
- timing and location of activities,
- compliance/ non-compliance with the Specifications, and
- any other information deemed necessary by the Engineer.

Method statements shall be submitted at least 7 days prior to commencing work on the activity to give the Engineer time to study the method statement and consult with contractor and specialists and to obtain written approval of the method statements. The Contractor shall not commence on that activity until such time as the method statement has been agreed to in writing by the Engineer. This will be done within this 10 day period.

Any changes required to the method statements once construction has commenced must be agreed upon in writing with the Engineer before being instituted.

F2.5 Working Areas

Regardless of the extent of the work, the following applies to all of these areas:

- All materials must be stockpiled or stored in a designated area (at each site) avoiding sensitive areas.
- No materials must be left on site once work is completed neither may they be dumped at any other place on site.
- Litter bins and containers for waste materials must be provided by the Contractor at each site. Bins should be weatherproof and scavenger proof.
- All waste must be placed in the bins and containers. No waste may be left lying on the site.
- Visible anti-litter signs must be displayed around the waste collection points and all employees must be encouraged to observe site rules pertaining to solid waste management practices. A

concerted effort should be made to collect and dispose of materials suitable for recycling, separately from the other solid waste.

- No burning or burial of waste is permitted.
- Any soils contaminated by the contractor must be removed or rehabilitated. If a significant amount of soil has to be removed fresh soil must be imported and the site rehabilitated by grading and planting vegetation.
- All waste must be removed to an authorised landfill site, or taken to a facility for recycling.
- Any excess road building materials must either be:
 - taken to a site for stockpiling and future re-use,
 - used for localised rehabilitation, or
 - removed from site by the contractor for disposal.
- The contractor shall provide waste bins for solid waste collection and storage. Such bins should be placed at designated areas within the site. The refuse collected from the site must be removed for landfill disposal at least once a week.
- Vehicles may not park in the road reserve except with the prior permission of the Engineer.
- Every care should be taken to avoid damaging vegetation or land when vehicles are in use.
- Fuel tanks, pumps, and all equipment using oil, diesel, etc. must have drip trays. The drip trays must have sufficient capacity to contain liquids that will spill in the case of failure of the tanks, etc. The waste liquids taken from the trays must be disposed of at a landfill which permits disposing of liquid wastes.
- Only emergency repairs to vehicles and equipment may take place on site. Where emergency repairs take place it is the responsibility of the contractor to ensure that all waste (e.g. spare parts and oils) are removed from site as soon as possible. All other repairs must take place at a yard off-site, where facilities are suitable and waste facilities are appropriate.
- Whenever practical a tarpaulin should be laid down, prior to emergency repairs taking place, to protect the environment from contamination.
- No natural vegetation may be gathered, removed or destroyed in the course of the Project, except where agreed to by the landowner.
- No hunting is permitted.
- Fires are prohibited.
- Erosion control measures must be implemented if the need arises.
- Pollution of water courses by any means must be avoided.
- No defacement of any natural or other features will be allowed; this includes markings for road works, unless markings are restricted to the road surface.
- Dust suppression measures should be implemented if and when required.

- Chemical toilets must be provided at all sites and must be within walking distance of the workers. They must be serviced on a regular basis in order to be kept clean and hygienic. The toilets must be placed in a sheltered place and should be locked after working hours if they are outside a camp area. Alternative arrangements to use existing toilets with owners' written consent may be allowed when submitted in writing.
- All waste from toilets must be disposed of at a permitted landfill or waste treatment works.

F2.6 On-site Workers Camp

F2.6.1 Site Camp

The campsite selection should be carried out in consultation with the landowner or relevant authority.

The site must be selected with due regard to the environment. Due care should be taken to avoid areas where sensitive vegetation and habitats occur.

When the site selection process has been completed, the contractor will define the boundaries of the site and erect a fence with a controlled access around it if practical.

All activities associated with the camp must be restricted to the demarcated area.

It is the responsibility of the contractor to ensure the safety of all personnel within the boundaries of the site. The contractor should have an on-site contingency plan detailing measures to be observed in the case of a health, safety or environmental emergency.

The contractor should ensure that all employees, employed by him and/or employed by Sub-contractors, have a clear understanding of safety regulations and procedures.

F2.6.2 Water, wastewater, and storm water

Site occupants must have access to safe drinking water.

If water is stored on site a clear distinction should be made between drinking water and multi-purpose water storage facilities.

All water used on site must be taken from a legal source and comply with recognised standards for potable and other uses.

Wastewater that is contaminated with soaps, detergents and other undesirable materials, such as grease and oils, should be collected in conservancy tanks and disposed of safely in a wastewater treatment facility.

It is illegal to discharge water into a public stream if the quality does not conform with required health standards.

In all camps storm water must be managed to prevent erosion.

Run-off will be diverted to control ponds so that silt may settle and any pollutants are trapped.

Subsequently, any pollutants must be treated, or removed and disposed of at a permitted landfill site or recycling facility.

All materials should be protected from the rain to prevent them being washed into stormwater channels.

F2.6.3 Ablution Facilities

The contractor shall provide proper and adequate sanitary facilities for all site employees.

These facilities shall be maintained in good and working condition at all times. Odours emanating from these facilities should be controlled within acceptable levels.

F2.6.4 Fires and Cooking Facilities

Fires will not be allowed.

The contractor must supply cooking facilities that are suitable for the environment and are not liable to cause the outbreak of fires. Fire-fighting equipment must be supplied by the Contractor at suitable locations.

F2.7 Plant and Equipment Storage Facility

F2.7.1 Plant

At the end of the shift all plant should be driven or transported back to the campsite for proper and safe overnight storage.

The contractor should ensure that equipment left elsewhere is stored in a manner that will not impact negatively upon the environment.

The plant should be regularly inspected for fuel and oil leaks that may be harmful to the environment, and/or aquatic life if washed into a stream or river.

F2.7.2 Hazardous Materials

Hazardous materials should be stored under lock and key in designated areas with properly displayed and visible warning signs.

All storage of hazardous materials must comply with legislation and regulations.

(a) F1003 REHABILITATION

Upon completion of each section of work the site must be cleared of all equipment, waste and any rehabilitation work must be undertaken. This may include local grading of soils and re-vegetation where sites have been disturbed.

Immediately after the demolition of the campsite, the contractor shall restore the site to its original state, paying particular attention to its appearance relative to the general landscape.

It is imperative that any potential erosion problems are addressed. This may require subsequent site visits to monitor the efficacy of erosion control measures.

(b) F1004 EMERGENCY PLANS

The onus is on the contractor to assess the potential risks to the environment as a result of the Project. For example, accidental spillage of materials may pollute the soil or any water body.

The contractor must draw up a suitable emergency plan to contain such pollution. The emergency plans and procedures must be taught to all the workers on site, so that everyone is prepared to cope with an emergency.

Appropriate equipment must be available to carry out the emergency plans.

(c) F1005 ENVIRONMENTAL AUDITING AND PENALTIES

On a regular basis, a qualified auditor will carry out a site audit to ascertain and verify the contractor's level of compliance with the requirements of the EMP.

Transgression will be treated as a contravention of the contractual agreement.

Deviation from these prescribed requirements will be met with penalties that are intended to enforce compliance.

It is a requirement that the contractor keep concise records of mitigatory measures undertaken at each site to minimise environmental impacts.

Any emergency situations that impact upon the environment should be recorded by the contractor together with the action that was taken to rehabilitate and remediate the site.

A copy of all completed environmental audits will be given to the contractor and the employer by the auditor.

Any public complaints regarding the environment must be recorded and discussed with the Engineer to determine an appropriate course of action.

The contractor will be responsible for all costs incurred in the rehabilitation of sites.

The contractor will be responsible for all costs incurred where emergency procedures are implemented to deal with accidents that impact upon the environment.

The contractor will be responsible for ensuring that all procedures required to rehabilitate all sites are implemented.

If third parties are called to the site to perform clean up and rehabilitation procedures, the contractor will be responsible for all costs.

Penalties will be imposed for contravention of the EMP, as specified in the EMP:

PART C4: SITE INFORMATION

Information Only

All data and descriptions contained in this section of the contract documents are given for information purposes only and cannot be interpreted as prescriptive despite the fact that the text may give the opposite perspective. If any conflict arises between the content of this section and other sections of the contract documents, the latter take precedence.

C4.1 LOCALITY PLAN

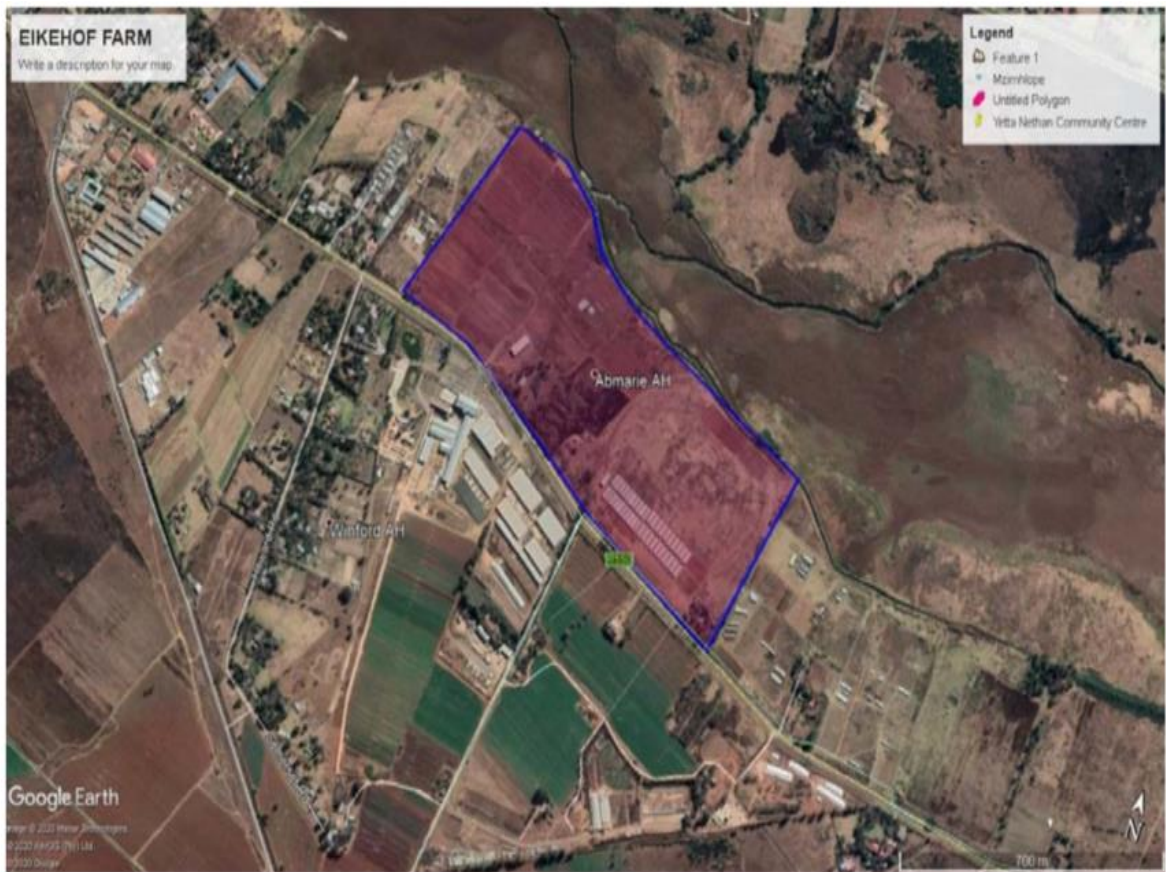


Figure 1: Locality of the Eikenhof Farm



Figure 1: Locality of the Northern Farm

C4.2 CONDITIONS ON SITE

- Geotechnical Report (Not applicable)
- Land Survey Report (Not applicable)

C4.3 OCCUPATIONAL HEALTH & SAFETY SPECIFICATIONS

Attached hereto.

C4.4 DRAWINGS

Attached hereto

C4.5 GEOHYDROLOGIST REPORT

Attached hereto

C4.3 Occupational Health and Safety Specifications
Eikenhoff and Northern Farms



**THE OCCUPATIONAL HEALTH AND SAFETY
SPECIFICATION FOR THE JOHANNESBURG
DEVELOPMENT AGENCY (JDA)**

**SOCIAL DEVELOPMENT PROGRAMME
NORTHERN FARM**



JDA- OCCUPATIONAL
HEALTH AND SAFETY
(OHS) SPECIFICATION-
SOCIAL DEVELOPMENT
PROGRAMME

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OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

FOR

**JOHANNESBURG DEVELOPMENT AGENCY
(JDA)**

SOCIAL DEVELOPMENT PROGRAMME
NORTHERN FARM





JDA- OCCUPATIONAL
HEALTH AND SAFETY (OHS)
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TS Doc Control	Name	Signature	Date
SHE Specialist	Olga Mlaudzi		21 April 2021
SHE Practitioner	Kondwani Kaonga		21 April 2021

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REVISION AND AMENDMENTS

Date	No.	Description Of Revision Or Amendment
20 April 2021	1	Final Version- Client Submission



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1. DEFINITIONS

“Building” Includes –

- a) Any structure attached to the soil;
- b) Any building of such structure or part thereof which is in the process of being erected; or
- c) Any prefabricated building or structure not attached to the soil;

“**Chief Executive Officer**”, In relation to a body corporate or an enterprise conducted by the State, means the person who is responsible for the overall management and control of the business of such body corporate or enterprise;

“**Competent Person**” means a person who is medically fit and possesses the necessary knowledge, training, experience and where legally required, the qualification required to perform a specific job. Task or role and or any person having the knowledge, training, experience and qualification specific to the work or task being performed. Provided that where appropriate qualification and training are registered in terms of the provision of the South African Qualification Authority Act, 1995 (Act No 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training.

“**Danger**” means anything which may cause injury or damage to persons or property;

“**Employer**”, means, subject to the provisions of subsection(2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him but excludes a labour broker as defined in section 1(1) of the Labour Relations Act, 1956 (Act No. 28 of 1956);

“**Hazard**” means a source of or exposure to danger;

“**Health and Safety Equipment**” means any article or part thereof which is manufactured, provided or installed in the interest of the health and safety of any person;

“**Incident**” means an incident as contemplated in section 24(1) and includes an environmental incident and a near miss.

“**Mandatory**” includes an agent, a contractor or a subcontractor for work, but without derogating from his status in his own right as an employer or a user;



“**Occupational Health Practitioner**” means an occupational medicine practitioner or a person who holds a qualification in occupational health recognised by the South African medical and dentist council as referred to in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No.56 of 1974), or the South African Nursing Council as referred to in the Nursing Act, 1987 (Act No.50 of 1978)

“**Risk**” means the probability that injury or damage will occur;

“**Safe**” means free from exposure to any hazard

“**Certificate of Competency**” or “**Certificate**” means a certificate of competency as a mechanical or an electrical engineer, as the case may be issued in terms of regulation 2(1)

“**Agent**” means any person for whom construction work is performed

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“Construction Activities” is any construction work as defined in construction Regulations and any training or meetings directly in relation to such construction work and exclude the transportation of employees to and from a worksite.

“Contractor” means and employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

“Fall Preventative 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 settling out the procedure and methods to be applied in order to eliminate the risk

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

“Health and Safety File” means a file or other record in permanent form, containing the information required as contemplated in these regulations



“Health and Safety Plan” means a documented 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.

“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.

“Medical Certificate of Fitness” 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.

“Structure” means any building, steel or reinforced concrete structure(not being a building) railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer 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; any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or any fixed plant in respect of work which includes the Installation, commissioning, decommissioning or dismantling where any such work involves a risk of a person falling two meters or more;



“Workplace” is the area defined as such in the NEC contract and includes the servitude and authorised access roads to and from the servitude by the shortest route, the site camp and material laydown areas but does not include any public road defines as such in terms of the Road Traffic Act.

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“Worksite” is the area in the workplace where construction activities are underway.

“On Duty” Is the time during which and after the Daily Safe Task Instruction is/has conducted and construction activities are being performed. It excludes to and from the workplace whether or not in a company, private, hired or subsidised vehicle. Where a vehicle has been provided solely for the purpose of transporting workers to and from the worksite, the driver only will be deemed to be on duty while driving in the workplace and on a public road.

“Visitor” is any person who is not permanently employed on the project and will not perform any construction work. It included persons who visit the project for a period of not more than 3 consecutive days including representatives from the client, facilitators from training organisations and specialist mechanics who assess or repair vehicles, plant or equipment. Employees from Head Office are not deemed to be visitors as they will spend time on the project at various intervals

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2. INTRODUCTION



2.1 Purpose

This Occupational Health and Safety Specification aim to:

- Outline the Health and Safety Requirements and approach that will be used during the Johannesburg Development Agency (JDA) –The design and implementation of deep excavations, concrete base, culverts and manholes to ensure that the construction works programme and compliance monitoring are aligned with the requirements of the Occupational Health and Safety Act 85 of 1993 and its latest regulations.
- Identify and comply with all project regulatory and related health, safety and environmental legal, client requirements in all project phases.
- Identify, assess and proposed mitigation measures for the risks pertaining to the project that can have a significant impact on the project quality, milestones, Safety, Health and Environmental contraventions.
- List the outcomes to be expected through the implementation of this specification and to ensure that they are implemented by all the project parties.
- Ensure that the monitoring, evaluation, reporting and review methods for this OHS specifications are implementable and appropriate as measuring tools to ensure effectiveness.
- Ensure that there are sound Health and Safety practices applied at all times and that Health and Safety remain the paramount of the construction works.

2.2 Occupational Health and Safety Specification Objectives

- That the Covid 19 construction-related regulations are complied with at all times.
- Zero Tolerance of Covid 19 or any other Hazardous Biological Agents incidents caused by the project activities.
- Zero tolerance to breaches of SHE requirements, including the Client Requirement, shall be applicable at all time.
- All hazards shall be identified, assessed and controlled through an extensive risk assessment process that is project-specific.
- Management and Supervisors shall lead by example to encourage involvement and ownership and all levels of management will accountable for managing safety and health issues
- Working safely to be the condition of employment and unsafe acts or behaviour shall be investigated and result in disciplinary action.
- Implementation of a Principal Contractor project-based training plan to ensure that employee involvement and consultation is essential.
- All incidents and near misses to be reported, investigated and communicated to prevent reoccurrences
- Ensure that sub-contractors and suppliers to strive for Safety, health and Environmental best practices and to comply with the Principal Contractor's Health and Safety Plan.

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2.3 Methodology and Safe Work Procedure expected outcomes

- To ensure that there are zero health, safety and environmental incidents that can be detrimental to the health and safety of employees, client and suppliers and contractors.
- An improvement in the management of the project throughout all the project phases from Site Establishment, Commissioning and Handover.
- A platform to attending to grievances, complaints and uncertainties in terms of Quality, Technical issues during all project phases.
- This OHS Specification can be measured, monitored, reviewed periodically to ensure continual improvement and also be reported for any changes or improvements to the client timeously.



3. LEGAL REFERENCES AND FRAMEWORK

3.1 National Legislation and Standards

Constitution of Republic of South Africa 108 of 1996
 Occupational Health and Safety Act 85 of 1993
 National Disaster Management Act, 2002
 Environmental Management Act 107 of 1998
 Environmental Management: Air quality Act 39 of 2004
 Environmental Management Waste Act 59 of 2008
 Atmospheric Air pollution prevention Act 45 of 1965
 Hazardous Chemical Act 15 of 1973
 National Water Act 36 of 1998
 Water Services Act, 1997
 Compensation of Occupational Injuries and Disease Act, 1993

3.2 Regulations, Norms, Standards and Strategies

Disaster Management Act, 2002 Sectorial Guidelines
 OHS Measures in the Workplace – Covid 19
 Management of Human Remains Regulations, 2013
 Draft Sectorial Construction Regulations, 2020
 Construction Regulations, 2014
 Driven Machinery regulations, 1988
 Electrical Installation regulations
 Electrical Machinery Regulations, 2011
 Environmental Regulations for Workplaces, 1987
 Facilities Regulations, 2004
 Hazardous Chemical Substance Regulations, 1995
 Hazardous Biological Agents, 2001
 Major Hazard Installations Regulations, 2001
 Noise Induced Hearing Loss Regulations, 2003

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Pressure Equipment Regulations, 2009

4. PROJECT SCOPE OF WORKS

- These specifications are applicable to the specific scope of work pertaining to the above-mentioned project as detailed in the tender documents, and is summarized below:

(i) OVERVIEW OF THE WORKS



General description of the scope of works

The works to be executed under this contract include the following but is not limited to:

- New bore hole installation
- Fencing
- Reconnection of transformer

Other Activities

- Establishment of the contractor on-site;
- Construction Works

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5. ROLES AND RESPONSIBILITIES

5.1 Client

- The Client or his appointed Agent on his behalf will appoint the Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Bills of Quantities.
- The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan of both Principal Contractor and Sub-Contractors for approval.
- The Client or his appointed Agent on his behalf will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Sub-Contractor is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every month.
- The Client or his appointed Agent on his behalf, will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:
 - have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
 - have failed to implement or maintain their health and safety plan;
 - have executed construction work which is not in accordance with their health and safety plan; or
 - act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.



5.2 Principal Contractor

- The Principal Contractor shall accept the appointment under the terms and Conditions of the Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 4 of the Construction Regulations.
- The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with.
- The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.
- The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of

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execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.



- The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement of the works.
- The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a tenderer's offer is based.)
- The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.
- The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.
- The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on-site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.
- The Principal Contractor shall, throughout the execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor.
- The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.
- The Principal Contractor will comply with the legal requirements such as the Occupational Health and Safety Act 85 of 1993, and with all its regulations namely, construction regulations, environmental regulations, hazardous chemical regulations, OHS Covid 19 measures in workplace regulations driven machinery regulations and all the other applicable ones within the Act.
- The Principal Contractor will comply with the Compensation of occupational injuries and Disease Act (COIDA) of 1993 when carrying out work, for reporting and adherence to the Act.
- The Principal Contractor will also comply with all the local legislation such as the City of Johannesburg municipality by-laws pertaining to the health and safety of the people, and all the community safety. The bylaws will also be applicable during the waste management at the municipality landfill site.
- The Principal Contractor will comply with the National Road Traffic Act when using national or regional roads as well as the suppliers.

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- The Principal Contractor will comply with the Environmental Legislation in support of the environmental regulations of the OHS Act 85 of 1993 as required by the Environmental Regulations.
- The Principal Contractor will comply as far as reasonably practicable to the client and stakeholders requirements.

5.3 Client Representatives roles and Responsibilities Table

Position	Responsibility
Client Consulting Engineer	<ul style="list-style-type: none"> • To monitor the Principal Contractors construction works programme and ensure that the project is not delayed. • To provide guidance and direction on the project with regards to the construction and project management requirements. • Overall responsible on behalf of the client in ensuring that the OHS requirements on the project are met.
Client Designer	<ul style="list-style-type: none"> • To ensure that the applicable safety standards incorporated into the OHS regulations are complied with in the design. • Provide and demonstrate all relevant health and safety information about the design of the relevant structure. • In form the client 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. • Inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design.
Client OHS Consultant	<ul style="list-style-type: none"> • Assessment and analysis of potential risks attached to the project • Development of a project-specific health and Safety specification for the project • Evaluation and approval of the contractor's health and safety plan for the project • Site visits and regular monitoring audits • Attend monthly site meetings for the presentation of the monthly audit report • Conduct a final compliance audit on completion of the project and submit a closeout report • Ad-Hoc meetings as required by the client • Presentations to affected stakeholders of the project

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5.4 Principal Contractor Roles and Responsibilities

Position	Responsibility
Chief Executive Officer CR 16(1)	The CEO takes responsibility for ensuring that SHE management is managed effectively throughout the business. The CEO will ensure that adequate resources are provided to ensure implementation of the SHE Policy and will appoint persons accordingly.
Finance and procurement	<p>The Finance and procurement take responsibility for ensuring that records of SHE management expenditure are maintained and can be extracted for confirmation and review purposes.</p> <p>The Finance and procurement will ensure that all the required resources for the implementation of this plan are procured timeously and effectively.</p>
Human Resources Manager	The Human Resources department is responsible for ensuring that SHE responsibilities form part of employment contracts and that SHE disciplinary actions are implemented when required.
Project Manager CR16 (2) Section 8 Duties	<p>As appointed by the CEO will carry out duties of the CR16 (2) appointee by being responsible for all the SHE Relate matters on the project. This will include but not limited to Resource allocation; Incident Management; Construction Methodology to reduce risks; Inspections and overall support of the Project SHE related matters.</p> <ul style="list-style-type: none"> The Project Manager Section 16 (2) appointee, as appointed by the Chief Executive officer Section 16 (1) of Principal Contractor Principal Contractor will be responsible for the Safety and Health of all persons entering the offices, and construction site camps during the construction phase of this project. The Project Manager shall be assisted in all SHE requirements by the Construction Manager who shall be appointed as the Construction Supervisor C.R. 8(7). The Project Manager shall be responsible for the appointment of all persons on the project as is legally required. This includes the legal appointments of persons employed as Mandatory's. The Project Manager shall appoint a competent SHE Officer on-site to assist with the implementation of the SHE plan and all Johannesburg Development Agency requirements on the project. The SHE Officer will support entirely by the SHE Manager, who will ensure that all SHE requirements are met both at Head Office and on Site. The Project Manager and Construction Manager shall ensure that all work operations on site of the appointed, competent supervisor with the Assistant Construction Manager Appointment. 8(1) The Project Manager and Construction Manager, with the assistance of the



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	<p>Principal Contractor Principal Contractor Project Administration and Head Office Administration, that centralised personnel database shall be kept which will entail a record of the induction, training and competency of all staff as part of the on-site SHE filing system.</p> <ul style="list-style-type: none"> • Construction Managers and Supervisors (Assistant Construction Manager) must ensure that they give clear instructions for the work to be performed to all personnel allocated to carrying out that work
Construction Manager 8 (1) Section 8 Duties	<p>Will make themselves familiar with, and shall work in compliance with the SHE Method Statements; SHE Plan; SHE Specifications and all the other SHE project related documentation for their tasks and its arrangements as they affect their activity;</p> <ul style="list-style-type: none"> • Will follow all SHE instructions issued by management and supervising staff relating to their work activity and emergency procedures; • Will Report any SHE incident arising out of or in connection with their work activity to their SHE Officer; Client and SHE Manager • Will refrain from any conduct that may impact negatively on the employees • Will ensure that the employees and equipment under their control are environmentally compliant at all times.
Temporary Designer	<ul style="list-style-type: none"> • To ensure that all temporary works are adequately designed so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied. • To ensure that the designs of temporary works are done with close reference to the structural design drawings. • To ensure that all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector.
SHE Manager (SACPCMP registration compulsory) All OHS Act Sections	<p>Identify any SHE hazards associated with the project; Ensure appropriate Risk Assessments for projects are carried out to develop the Risk Management Plan.</p> <ul style="list-style-type: none"> ➢ Ensure implementation of SHE requirements; ➢ Ensure all staff on projects are aware of SHE requirements ➢ Ensure that any incident is recorded and investigated where appropriate in accordance with the Accident Reporting Procedures. • Ensure that Monthly SHE meetings are held and effective • Support all site SHE Based staff through training and capacity building. • Carry out Audits and Adhoc site inspections to track compliance.



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<p>SHE Officer CR 8(5) (SACPCMP registration compulsory)</p>	<p>The SHE Officer is required to actively advise and assist the Construction Manager and Construction Supervisor to ensure the following:-</p> <ul style="list-style-type: none"> • Compliance with all S HE Legislation • Compliance with the company’s SHE Management System • Implementation of the contract-specific SHE Management Plan • Early identification and reporting of significant site-specific SHE risks • Management of the interactions with landowners • Reporting, Investigation incidents, accidents and near misses. • Safety, Health and Environmental control of site activities • Good and timeous liaison with the client with regard to environmental matters. • SHE officer must be competent to do work and must provide relevant proof of registration (SACPCMP). • The SHE officer will be responsible to advise the Project Manager and Construction Manager on all Safety, Health and Environmental related issues. • The SHE Officer will be responsible for compiling and filling in an incident Logbook whenever an accident, incident or near-miss occurs on-site, and for informing the SHE Manager and SHE Head Office incident number shall be referenced in the Incident Log Book on the project. • The SHE Officer shall carry out weekly inspections on all Principal Contractor Construction Teams, all appointed Mandatory and conduct internal audits at least monthly and all audit reports shall be submitted to the Construction Manager, Project Manager and the SHE Manager within 7 days of such audit. The SHE officer will make the inspections available on site for the Johannesburg Development Agency Safety and environmental Representatives for audit purposes. • The SHE officer will communicate any deviations to the SHE Plan to the relevant team supervisor and will follow up to ensure that the matter is dealt with. <p>The SHE Officer is also required to identify and report any deviations from the legislation, SHE Management System and the contract-specific SHE Management Plan through regular auditing and the generation of non-conformance reports (NCRs) and Corrective action reports (CARs) SHE officer is required to be active in assisting the site management to close out NCRs and CARs.</p>
<p>SHE Reps Section 17 Duties Section 13 Duties</p>	<ul style="list-style-type: none"> • Will make themselves familiar with, and shall work in compliance with the SHE work instructions for their tasks and its arrangements as they affect their activity; • Will Report any SHE incident arising out of or in connection with their work activity to their Supervisor. • Will refrain from any conduct that may impact negatively on the employees



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<p>General Employees Section 14 Duties Section 13 Duties</p>	<ul style="list-style-type: none"> • Will make themselves familiar with, and shall work in compliance with the SHE work instructions for their tasks and its arrangements as they affect their activity; • Will report any potentially Safety, health and environmental defect in premises, plant or equipment to their Supervisors, Construction Manager or Contract Manager; • Will Report any Safety, health and environmental incident arising out of or in connection with their work activity to their Supervisor • Will refrain from any conduct that may impact negatively on the employees
<p>Project Employees</p>	<p>Employees will be responsible for their health and safety and that of their co-workers in their area. Employees will be made aware of their responsibilities during site induction, weekly toolbox talks and daily safe task instruction. These responsibilities include the following:</p> <ul style="list-style-type: none"> • Familiarising themselves with workplace, work tasks and health and safety procedures • Working in a safe manner to ensure that they do not endanger themselves or others • Keeping the work areas tidy by observing housekeeping practices • Reporting all incidents/accidents and near misses immediately • Protecting fellow workers from injury • Reporting unsafe acts and unsafe conditions • Reporting any situation that may become hazardous • Carrying out lawful instruction and obeying the health and safety rules • Adhering to the Principal Contractor Requirements, the Principal Contractor Health and Safety Policy and the client specification <p>All employees will be inducted before being permitted to work on site. This shall include a company Induction, project Induction facilitated by Johannesburg Development Agency after which a project-specific induction facilitated by the Principal Contractor.</p> <p>No employee shall be permitted to undergo a project induction unless they are in possession of a copy of their medical certificate of fitness and proof of having attended the Johannesburg Development Agency Induction both of which shall be handed to the inductor for filing purposes.</p> <p>Employees will not be permitted to work under the influence of alcohol or drug</p> <p>Any violation of the SHE Plan will result in disciplinary from the project and disciplinary action will be instituted which could result in dismissal. Disciplinary action will be implemented for any violations of health and safety rules and employees will be re-inducted or retrained.</p>



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Plant Operators



- The Construction Manager and Safety Officer, jointly, will ensure that only competent and qualified employees operate any vehicles, plant or equipment. Such drivers and operators must be in possession of written authorization to drive or operate the specific category of plant, machinery or vehicle which shall be kept in their respective files in their vehicles.
- All drivers or operators shall be responsible to complete a Daily Vehicle Check Sheet and shall hand these to their respective supervisors who shall peruse each check sheet and if satisfied that no faults have been reported shall return it to that driver operator who shall keep it in his possession for the duration of the shift. If any fault is reported, the supervisor shall bring this to the attention of the appointed inspector who shall decide whether the vehicle may be permitted to continue working and shall so endorse the check sheet.
- Should he deem the vehicle unsafe to use he shall bring this to the attention of the Construction Supervisor. Completed check sheets shall on a weekly basis be handed to the Safety Officer for filing.

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6. HEALTH AND SAFETY MANAGEMENT DOCUMENTATION

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a Health & Safety File on-site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done. A more detailed list of documents and other legal requirements that must be kept in the Health and Safety File is attached as an addendum to this document.

Legal Documents	Project OHS Plans	Monitoring Documents
<ul style="list-style-type: none"> • Client's approval of the SHE Plan • General Liability Insurance (Summary of Policy) and/or COIDA Letter of Good Standing • Department of Labour Notification • Section 37 (2) Agreement • Appointment letters • Site Access Certificate 	<ul style="list-style-type: none"> • Health and Safety Plan • Fire Prevention Plan • Fall Protection Plan • Emergency Preparedness Plan • Incident and Accident Management Procedure • Method Statements (Safe Work Procedures) • Risk Assessments • Covid 19 Policy and OHS Plan. • Covid 19 Risk Assessment 	<ul style="list-style-type: none"> • Records of all reported Incidents, accidents and near misses • Daily Safety Task Instructions • Site Induction Records/Attendance Registers • SHE Committee members Audit Reports • Job Observation records • Visible Felt Leadership records • PPE Issue and Inspection Records • Training Matrix • Equipment Inspection Checklists • Monthly SHE Meeting Minutes • Medical fitness certificates • Hazardous substance registers and Material Safety Data Sheets Permits • Mandatory Records i.e. assessments, audits, appointments, safety files • Performance statistics • Lifting equipment certificates • Client Specifications • SHE Correspondence • Emergency Plan and Contact Numbers • PPE and Clothing Register • Permits (Hot Work, Confined Space, Excavation, Hi-Voltage, etc.) • Inspection and Audit Reports (internal and external) • Incident Register and Investigation Reports • MSDS's • Calibration Certificates • SHE Statistics and Reporting • Copy of Occupational Health and Safety Act & Regulations • Proof of site handover (meeting minutes) • Health and Safety Training Records • Proof of competency records • Equipment Registers

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7. CONSTRUCTION ACTIVITIES AND WORKS

7.1 Site Establishment

7.1.1 Site Layout



- A good site layout is important to ensure the safety of the working environment and effective and efficient operations.
- Construction site layout planning involves identifying, sizing, and positioning temporary and permanent facilities within the boundary of the construction site.
- The plan must take into consideration Safety, Health and Environmental Management information such as fire precautions, emergency preparedness, first aid areas, welfare facilities, Waste Management with relevant signage. Existing services on the land must be displayed on the site layout plan.

7.1.2 Access and Traffic Management

- Where activities are performed close to public routes, the Principal Contractor will establish a traffic management plan including the requirements of relevant municipal by-laws.
- The contractor should ensure that proper access control is in place and functional at all times on and off the construction site.
- The contractor should capture images of an access road before and after the construction of the site camp.
- At a minimum, there should be a provision of barricading, warning signage and flagmen to ensure the protection of workers from moving vehicles.
- Where required, the Principal Contractor will interact with the local traffic department to establish minimum requirements to be implemented on public routes.
- The contractor shall obey the site traffic plan to ensure the safe movement of all construction mobile plants on site.
- The traffic management plan will be reviewed at the monthly safety meeting to ensure its applicability. Proper road signage must be displayed during the construction phase of the project. All security requirements have to be highlighted at the induction given by the contractor.

7.1.3 Demarcation and Fencing

- Demarcation of the selected site has to be done to ensure that there is no interference with the neighbouring properties.
- Where hazards exist, entry must be specifically restricted for safety and health reasons.
- A security fence will be erected around the construction site to demarcate the boundaries, as well as to restrict access from the site to surrounding areas where trampling may occur on the indigenous vegetation. Internal demarcation will be erected to outline particular designated and screened areas.

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- A fire break will be maintained on either side of the fence to limit the spread of fire from neighbouring properties; this shall be maintained regularly.
- Where there is indigenous vegetation, the clearing of the firebreak should be supervised by the SHE Officer more often.

7.1.4 Signage and Notices

- At the entrance of the site camp, a sign with the Johannesburg Development Agency and Principal Contractor, OHS Consultants and emergency details will be erected and shall include the project name and number, the name and contact numbers of the Project Manager, Site Manager, SHE Officer.
- Having established the site camp, the Construction Manager and SHE Officer shall together assess the needs for and the location of all fire and first aid treatment facilities. Signage shall be prominently displayed indicating the location of each of these.
- The SMI board will be erected that will display Principal Contractor and Johannesburg Development Agency logo, Lost Time Injuries Frequency Rate (LTIFR); Man Hours and Incidents, accidents statistics.
- Safety, Health and Environmental Signage (Visible and Interpretable) (SANS 1186) will be posted on the construction site to ensure that employees are well made aware of the workplace surroundings. The signage will include but not limited to drinking water sign on water points, Fire extinguisher signs indicating the location of fire extinguisher; Assembly point signage and demarcation for emergencies; First Aid Kit signage to alert employees of the First Aiders location; Construction Area signage demarcating the active construction works; Barricading caution signage and excavation signage indicating the open excavations.
- More signage will be installed in addition to the above mentioned to ensure that persons working well made aware. Persons will be trained to ensure that they can interpret the signs.
- Barricading will be applicable on the excavations and other no go areas demarcation to ensure that persons are prevented through visibility of excavation hazards and risks. These will also be incorporated into the method statements, risk assessment and standard operating procedures.

7.1.5 Barricading

- All barricading shall at all times comply with the requirements of CR13 (3)(I). All excavations and openings where there exists any risk of a fall, shall at all times be properly barricaded using a solid type of barricade or fencing, able to withstand a horizontal pressure of 100 kilograms. Signs with the responsible person's contact number will be placed on at least one of the barricades at each location.
- When an excavation or unsafe deep places is to be left for a period exceeding 2 days, the supervisor shall inspect all barricading daily and ensure that all is and remains safe and serviceable and he shall keep a record of such daily inspections. Where barricading is to be used to prevent accidental entry into a "High Voltage Area" use may be made of orange / red shark netting.

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Under no circumstances may danger tape be used in lieu of barricading.

7.1.6 Workplace Facilities.

- The contractor shall ensure that where reasonably practicable provide ergonomically sound seats for every site management offices for employees whose work can be effectively performed while seating.
- All entrances of the ablution facilities must be constructed in a way that will accommodate privacy to users and keys shall be kept inside, to enable the user to lock while inside.
- Ablutions shall be properly marked for gender identification, separate male and female changing facilities and sheltered eating areas. Furthermore, these facilities must be kept clean and free from odours at all times.
- Sanitary conveniences must be provided and maintained at a rate of at least one shower facility for every 30 workers and at least one ablution facility for every 20 workers.
- Where chemical toilets are provided, one toilet for every twenty-five employees must be allocated. All ablutions must be properly cleaned on the daily basis, disinfected and provided with toilet paper.
- All employees making use of these facilities have the responsibility to adhere to all etiquette hygienic practice.
- Provision of washing facilities, including soap and towels, must be made available for use by the contractor's employees.
- Drinking water must be provided on-site.
- Drainage from all facilities must be properly designed and constructed to prevent employee exposure to wastewater and the associated biological hazards.
- Wastewater may not accumulate or stand in pools at any location on the project site.
- No chemicals or equipment's, except those normally used for domestic cleaning of these facilities, may be stored in the facilities.
- The Eating Area will be established for the employees to use as required by the facilities regulations. The food will be kept within reasonable temperatures and the water will be kept cool for consumption purposes. Only designated eating areas will be used for eating purposes and the employees will have access to waste disposal facilities but within a reasonable distance that will not be affected by the waste receptacles.

7.1.7 Stacking And Storage

The stacking and storage of materials will be in accordance with the Occupational Health and Safety Act 85 of 1993, stacking and storage regulation. The storage and staking method will ensure that the risk of falling and collapsing objects is prevented. The stacking of material must be on a stable level surface in order to ensure that the stability of the materials is secured.

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7.1.8 Hazardous Substances

A contractor must designate a hazardous and chemicals storage area. The designated area must be constructed with a concrete foundation and must be surrounded by a bund wall and must have 110% of the volume of the substances stored. The concrete foundation must deep gentle in one direction where a drainage system with a stop cork installed. Access to the hazardous and chemical storage area must be controlled. Where required the Health and Safety Plan shall include a method statement detailing the safe use, storage, decanting and spill controls for all flammable liquids used and stored on site.

7.2 Structures.

A contractor must designate a competent person who will control and supervise all work on the erection of structures.

- A contractor must ensure a relevant risk assessment and method statement are developed and applied.
- A contractor must ensure that 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.
- No structure or part of a structure must be loaded in a manner which would render it unsafe; and all drawings on the design of the relevant structure must be kept on-site and made available on request to an inspector, other contractors, the client and the client's agent or employee.
- The structure must be maintained in a manner that it remains safe for continued use; The records of inspections and maintenance shall be kept and made available on request to an inspector.
- No person shall perform the trade of plumbing as contemplated in Government Notice No. R. 1875 of 31 August 1979 unless he is a trained plumber or works under the adequate control of a trained plumber or approved competent person.
- A contractor must ensure that all temporary works structures are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the structure that the structure is not designed to withstand.
- All temporary works structures are inspected by a competent person immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least daily until the temporary works structure has been removed and the results have been recorded in a register and made available on site.



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7.3 Electrical Works.

The contractor must ensure that all electrical installations on the construction site are designated to a competent person who has been appointed in writing for that purpose. Method statements for all the activities should be in place.

- A contractor shall appoint a competent electrician in writing who shall control all electrical installations.
- All temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site.
- All electrical machinery is inspected by the authorized operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.
- A contractor must ensure a relevant risk assessment and method statement are developed and applied.
- Electrical installation worked on by a contractor must be inspected by a competent person to ensure that the installation complies with all legal requirements, codes, design criteria and safety standards applicable to the project.
- Work on new electrical installations and modifications or repairs to existing installations may only be carried out by competent personnel. Electrical safety devices specifically, earth leakage protection and overcurrent protection must be installed on all distribution circuits and the settings must be established by suitably qualified personnel.

The provisions of Regulation 24 of the Construction Regulations shall be followed in every detail.

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8. Construction Works Management

8.1 Plant and Equipment Inspections

- The appointed Plant and Equipment Inspector and Safety officer, jointly, will ensure that all plant used is equipped with the necessary guards for protection. All guarding will be examined monthly by the appointed Plant and Equipment Inspector and a check sheet completed by them.
- The Safety Officer will ensure that all equipment in use has been inspected/checked/tested regularly by the Supplier / Appointed Inspector to ensure compliance to OHS Act 85 and relevant Regulations.
- A competent inspector of Construction Vehicles and Mobile Plant shall be appointed by the Project Manager unless if supplied or outsources whereby the service record, inspection records and maintenance records will be inspected by the SHE Manager/ SHE Officer.

8.2 Noise Management



- No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to the surrounding community.
- The Contractor will take preventative measures (e.g. screening, muffling, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools.
- The speed limit should be 40km/h on all roads running through and accessing the project area.
- Machinery should be serviced periodically.

8.3 Dust Management

- Dust must be suppressed on access roads, office camp, and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that must not result in the generation of run-off.
- Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.

8.4 Waste Management

- Application to dispose of waste shall be made to ensure that there is approval to dispose of waste.
- The contractor must ensure that all waste that is generated on-site is handled, stored, transported and disposed of under the requirements of the applicable legislation.
- No waste may be removed from the project site to waste storage or disposal facility unless that facility has been approved for use by the nominated project management representative.
- Designated waste bins and skips must be provided by the contractor and suitable arrangements must be made to ensure that these bins and skips are emptied regularly.
- Hazardous wastes must be kept separate from general wastes.

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- Waste disposal service providers must be approved by the nominated project management representative before any waste is removed from the site.



8.5 Stacking and Storage

- The stacking and storage of materials will be in accordance with the Occupational Health and Safety Act 85 of 1993, stacking and storage regulation. The storage and staking method will ensure that the risk of falling and collapsing objects is prevented. The stacking of material must be on a stable level surface in order to ensure that the stability of the materials is secured.
- Failure to properly stack and store can cause spillages which has an effect on the environmental protection, the health and safety of the persons leading to inhalation and physical injuries; property damage; material loss and production loss.
- The stacking of objects must be horizontally supported in proportion with the vertical height to reduce the falling of objects. Effective Stacking and Storage will ensure that there are no obstructions to the access to fire equipment; electrical connections; doorways; walkways; first aid access; work areas and construction areas.
- Hazardous Chemical storage must be in line with the hazardous regulation of the OHS Act 85 of 1993; project-related Environmental Management Plan and the Environmental method Statements. The hazardous chemical substance must have a Material Safety Data Sheet at the point of storage and use at all times.
- The storage and stacking of hazardous chemical substances must in such a way that should spillages occur, the preventative measure can be feasible before affecting the environment at the workplace. A staking and Storage Appointment will also be in place for the person responsible for ensuring compliance.

8.6 Hazardous Substances

- If any Hazardous Substance is to be used, stored, transported or manufactured, arrangements must be made for the safe use, storage and transport thereof. Materials Safety Data Sheets shall be kept in the store and in each supervisor's file where any possibility exists that any person may be exposed to such substances. PPE must be used in every instance where such a substance is used.
- First Aiders are to be specifically trained in the Treatment of any person who is exposed in any way and additional facilities are to be made available for such treatment. These include, but were not limited to eyewash facilities, etc. The client representative must be advised in writing by the Principal Contractor Project Manager prior to any Hazardous Substance being brought onto the site.
- All containers shall be properly marked with the contents fully described. If decanted into another container for use, no more shall be decanted than what can reasonably be expected to be used during any single operation. A register shall be kept of all Hazardous Substances on site.

UNDER NO CIRCUMSTANCES MAY COOL DRINK OR SIMILAR BOTTLES OR CONTAINERS BE USED.

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8.7 Housekeeping



- The Construction Manager is responsible to ensure that a competent person has been appointed to supervise all stacking and storage operations. To ensure that SHE remains paramount, shall ensure that areas are of sufficient size and demarcated according to the approved Environmental Management Plan for the site and camp/yard areas. All demarcations shall be strictly adhered to at all times.
- The principle to be applied is that there is a place for everything and everything has its own place and the correct placement of things will ensure proper housekeeping.

8.8 Scaffolding

- A contractor must appoint a competent person in writing who must ensure that all scaffolding work operations are carried out under his or her supervision and that all scaffold erectors, team leaders and inspectors are competent to carry out their work, as per Construction Regulation 16.
- A contractor using access scaffolding must ensure that such scaffolding, when in use, complies with the safety standards incorporated in the Construction Regulation 16.
- All Scaffolds must comply with SANS 10085, as per Construction Regulation 16.
- Scaffolding must be inspected and supervised daily and after inclement weather or any other imposed load by a competent appointed scaffold inspector.
- A contractor must ensure that all scaffolds are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the scaffold that the scaffold is not designed to withstand.

8.9 Smoking.

- The contractor must designate a smoking area on-site; however, the selected area must comply with the applicable legislation. Such an area must be demarcated and the required signage must be displayed
- The contractor must not permit smoking on-site except within designated smoking areas.
- Any person found smoking or discarding a cigarette butt outside of a designated smoking area may be removed (temporarily or permanently) from the site. In all designated smoking areas, adequate non-combustible commercial ashtrays and/or cigarette butt receptacles (butt cans) must be provided.
- Ashtrays and other containers provided for the disposal of smoking materials must not be emptied into rubbish bins or any other container holding flammable materials. "No Smoking" signs must be strictly observed.

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8.10 Hand Tools, Explosive Tools and Portable Electrical Equipment

- Hand tools, explosive tools and portable electrical equipment will be logged on a register. This equipment shall be registered and inspected daily by a supervisor and persons using the tools. The SHE Officer will inspect these daily and a qualified person will conduct inspections on a weekly basis. No person shall operate any explosive powered tool or any portable electric tool unless trained in the correct safe use and handling thereof.
- All plants, vehicles, machinery and equipment which has the potential to cause electric shock from contact or injury from nip points or moving parts, shall be properly guarded against exposure. Should the guarding be located within a safe working distance of the potential contact point, it shall be of a solid type to prevent potential exposure of fingers to contact or injury. No item of plant, vehicle, machinery or equipment which is required to be guarded may be used if the guards are missing or defective in any way.

9. CONSTRUCTION WORK DOCUMENTATION

9.1 List of Appointments and References

- Copies of all appointments legally required by the Act are to be filed In the SHE file and copies relevant to each team are to be placed in the relevant supervisors working file. A checklist of appointments anticipated on the project.
- Only persons deemed to be competent may be appointed. The responsibility of ensuring competence is with the Project Manager who shall be the only person entitled to sign any appointments other than his own appointment In terms of Section 16(2) which shall be signed by the Principal Contractor CEO. The list below is the basic appointment list and the additional appointments must be in place as required by the Act for activities depending on the project activities.
 - Construction Regulation Section 16(1) Declaration of the CEO/ Board Appointment
 - Construction Regulation Section 16 (2) Project Manager
 - Construction Regulation CR 8 (1) Construction Manager
 - Construction Regulation CR 8 (7) Construction Supervisor
 - Construction Regulation CR 8 (8) Assistant Construction Supervisor
 - Construction Regulation CR 8(5) SHE Officer
 - Construction Regulation CR 9 (1) Risk Assessor
 - Construction Regulation CR 10 (1) Fall Protection Officer
 - Construction Regulation 23 (1)i) Construction Vehicle and Mobile Plant Inspector
 - General Safety Regulation 26(a) Stacking and Storage Supervisor
 - Construction Regulation 29 (h) Fire Fighting Equipment Inspector
 - General Machinery Regulation 5(1) Portable Electrical Tool Inspector
 - General Administration regulation 9(2)- Incident Investigator
 - General Safety Regulation 3(4)- First Aider
 - General Safety Regulation 13(A) Ladder Inspector
 - Construction Regulation 17 (1) GAR 7 Safety, Health and Environmental Rep
 - Construction Regulation CR 24(a)- Temporary Electrical Install Controller



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9.2 Risk Assessments

- At the commencement of the project, a team of qualified risk assessors which involves a SHE representative, Construction Manager; Project Manager; Finance and Procurement representative; SHE officer will conduct a project-specific risk assessment for each activity and will assess and propose management plans.
- The Principal Contractor will take control measures to assist the SHE Officer by advising of possible dangerous conditions and working methods that they have identified within the workplace. All dangerous conditions identified must be reported to the SHE Manager and Construction Manager Immediately and corrective steps taken.

9.2.1 High-Risk Activities

- The Construction Manager and SHE Officer jointly will ensure that only competent and qualified employees work at heights and that they have each undergone a medical examination by an Occupational Health Practitioner within the previous 12 months certifying them physically & psychologically fit to work at heights.
- The SHE officer and Construction Manager will jointly ensure that the team Supervisor conducts Daily Safe Task instructions pertinent to the tasks to be performed that day and Risk Assessments, that they are recorded.
- The Supervisors must personally discuss the tasks for the day and point out any dangers and limits for those tasks as is contained in the Daily Safe Task Instruction. This responsibility may not be passed on to another person, However, it is recommended that team members rotate and that each participate in Identifying the risks prevalent and advise the learn of SWP's. This is to facilitate involvement and must still be done in the presence of and under the direction of the appointed supervisor. Both the Weekly Toolbox Talk and the DSTI are to be signed by every employee prior to work commencing.
- The appointed supervisor or foreman, who is appointed into CR8 (8) shall remain present at all times while any form of work is being undertaken.
- Such supervisor shall ensure that use is made of all safety devices and any other equipment which has been identified or which may be required in the interests of Safety & Health. These would include not be limited to; PPE, Barricading, Warning Signs, etc.
- A Fall Protection Plan will be compiled separately to this Written SHE Plan by a competent person in line with fall protection Plan Development requirements as per Construction Regulation 10. The Construction Supervisor and all relevant Assistant Construction Supervisors will be issued with the latest revision of the Written SHE Plan and the Fall Protection Plan.

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9.2.2 Task Risk Assessment



- At every location where a task or job is to be performed, the Supervisor shall ensure that the Base Line Risk Assessment and Method Statements which are in his possession are valid and that no additional hazards or risks are present.
- The Supervisor shall endorse the DSTI to that effect and shall include a reference to the various risk assessments in the DSTI's which are to be signed by every employee on site prior to the commencement of any work.
- Where a hazard develops during a work process, which has not been previously identified or addressed, and this is recognized by the supervisor or another person and reported to the supervisor, the supervisor shall make an assessment of the hazard and if deemed by him to be of low risk, the supervisor may allow work to continue, otherwise, the supervisor shall immediately cause all work related to that hazard to be stopped and arrange a formal Risk Assessment be carried out by a team and shall then revise or develop his Safe Work Procedure based upon the outcome of the risk assessment process, always considering SAFETY FIRST.

9.2.3 List of risk assessment identified for this project are but not limited to the following:

- Risk Assessment: Site Establishment
- Risk Assessment: Alterations
- Risk Assessment: Concrete.
- Risk Assessment: Structures
- Risk Assessment: External Works
- Risk Assessment: Working at Heights

9.3 Method Statements And Safe Work Procedures

- All Method Statements will be submitted to the Client for approval. Based on the risk assessments, the Construction Manager, SHE Manager and SHE Officer and relevant Supervisor shall develop a method statement for each task. No project activity will commence without the approval of a project-specific method statement and the risk assessment.
- Any deviation from the approved method statement and risk assessment on carrying out work will result into revoking the approval and the Principal Contractor will have to stop all activities and review the method statement and risk assessment for re-approval.
- Combined there shall be the method in which the task is performed safely and may not be deviated from unless during the performance of the task it becomes apparent that the procedure is unsafe. After completion of each task, the Supervisor shall review the validity of each Method Statement and the procedures followed.

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- Where the Construction supervisor or Construction Manager or other team members feel that the methods used could be improved upon in a view to reducing risk, The Construction Manager shall advise the SHE Officer and jointly they will revise the relevant Method Statement and submit it to the Johannesburg Development Agency OHS Consultant and representative for ensuring that the methods are aligned with project objectives, legal and Johannesburg Development Agency requirements. Such revisions shall immediately be included in the SHE file and copies handed to each supervisor who would at that stage have an older version in his working file.

ANY AMENDED RISK ASSESSMENT OR METHOD STATEMENT, ONCE ACCEPTED AND IMPLEMENTED ON SITE AND REPLACE THE PREVIOUS VERSION

10. WORKPLACE SAFETY MANAGEMENT

10.1 Personal Protection Equipment (PPE)



- The Construction Manager and SHE Officer with the assistance of the Principal Contractor SHE Manager shall undertake a risk assessment at the project start-up to identify the PPE that will be required for each task to be performed during the project.
- The Project Manager and Site Manager are to ensure that the required PPE is available for distribution to the employees.
- Supervisors are responsible for ensuring that the persons under their authority are wearing the Personal Protective Equipment necessary for the tasks they are performing. This shall include a minimum of two-piece overalls for all workers excluding supervisors. Specific PPE shall be used as is identified as a final control measure in Risk Assessments.
- Employees are responsible to ensure that they wear, inspect and maintain the PPE in good order and report damaged PPE to the supervisor immediately.
- Managers, Supervisors and Foremen will wear high visibility vests and white hard hats.
- Dedicated First Aider, SHE Officer will wear green hard hats with appropriate stickers attached on both sides indicating their status.
- Visitors will be provided with a high visibility vest and wear a hard hat with a "VISITOR" sticker attached on both sides.
- Every person on-site or at a workplace shall wear appropriate foot protection.
- Hearing protection shall be worn by every person who enters into a demarcated noise zone.
- Eye protection shall be worn by all persons on site. They shall be of a type with shatterproof lenses and side shields. Anyone who wears prescription spectacles shall ensure that they comply with this requirement or they shall wear appropriate goggles over such prescription spectacles.
- Any person working Inside an excavation shall wear clear safety glasses and all others may wear tinted safety glasses.
- Any workers handling any material shall wear gloves. Where it is cumbersome and not dangerous, work may be undertaken without the use of gloves. Examples of these are mechanics and persons assembling nuts and bolts where dexterity is important.
- All vehicles used to transport persons shall be suitable and will comply with the requirements as stipulated in Construction Regulation 21 and the specification. A seat and seatbelt shall be provided to, and shall be used by, every person at all times being transported whether on-site or off-site.
- It is the responsibility of all drivers is to ensure that employees are seated with seat belts fastened and safe while in transit.

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- To ensure compliance drivers are required to personally check that seatbelts have been fastened and not rely on a passenger advising them that it is safe to commence driving. There should be no personnel on the rear of the LDVs or trucks whenever heavy materials are transported. Drivers are to be disciplined for failing to comply.
- Every person working on or visiting the worksite shall wear safety shoes or boots.
- Safety shoes/boots remain necessary, however other PPE is not necessary for designated and signposted 'GREEN AREAS". This shall normally only be the site administration area and is applicable to administration staff.
- Supervisors shall inspect all PPE of every employee in their teams at least monthly and record the findings as required on the inspection record sheets. Where it is found that PPE is unsafe or worn and requires replacement, an application must be completed.
- The induction is to be carried at all times and must be produced at the request of any employee at any time while on the site. Visitors will at all times be accompanied by a competent person. Any client representative or other employees not permanently and solely employed on the project shall be deemed to be a visitor. Clients representative's permanently employed on the project need not be accompanied.
- No visitor may perform any construction work. Persons from training institutions who are at the project solely to provide training shall only be required to attend the visitor's induction.
- Specialists who visit the site including for example Mechanics or Technicians who are there only to assess or repair specific equipment shall only be required to attend the visitors' induction prior to being allowed to commence any work.
- No employee will be allowed to work without the adequate and relevant PPE
- Employees will be given N95 masks to be worn and face shields
- Re-usable PPE such as overalls will be worn by employees
- Gloves are to be worn at all times
- Re-usable PPE must be thoroughly cleaned after use and not shared between workers
- Single-use PPE should be disposed of so that it cannot be re-used
- Single-use PPE is to be treated and disposed of as hazardous waste. Their disposal will be as per the contractor's guidelines.

10.2 Workplace Occupational Stressors

- Once the construction camp has been outlined and the layout of the camp confirmed the Project Manager, Construction Manager, SHE Office with the assistance of the SHE Manager and relevant
- Supervisors will set about identifying the occupational stressors.
- The SHE Officer will supply a baseline list of occupational stressors identified on other similar projects and these will be used as a guideline to identifying the project-specific stressors.
- Once these stressors have been identified, a risk assessment will be carried out to determine the significance of these stressors in each area or activity where exposure to them can be identified.
- Those areas or activities that return a "Medium to High" risk of the stressors occurring will be investigated and monitored and specific control measures implemented. These control measures will be provided in a written format for distribution to the supervisors in the areas or activities where these stressors have been identified.
- The Supervisors will be responsible for ensuring that the employees are made aware of the stressors and that they are implementing the control measures that are specified.

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- Ongoing monitoring of the effect or presence of these stressors will be implemented. A written programme to monitor will be developed and implemented on the site for the duration of the programme.
- Should the risk assessments or the legal situation require it, an independent occupational hygiene consultant will be appointed to carry out the monitoring to determine the impact of a stressor. Where necessary, the exposure to stresses of an individual will be monitored through the medical surveillance programme and through the Employee Wellness Programme.

10.3 Occupational Health: Medical Surveillance Programme

- It is required that all people working on the project undergoing medical examinations be examined by occupational doctor for all possible scenarios and the certificate is to indicate all categories of fitness. Medical Certificate of Fitness and Medical Records is to be completed by the OHS Practitioner. This is in order to facilitate promotions or other job function into which the employee may be promoted. This is to include the Covid- 19 requirements.
- All of these shall be submitted to the SHE Officer who shall decide on the type of employment of the individual and compile the necessary contract based on the levels of fitness and exposure which the OHS practitioner has deemed the employee fit to perform.
- Only a copy of the certificate of fitness to work may be retained on-site, but the full medical record must be available on request.

10.4 Employee Health Wellness Welfare and Assistance Programme



- The Principal Contractor must value its people and be committed to creating a positive, health and diversity-friendly working environment. The Principal Contractor will implement on-site SHE awareness training by including certain off-site SHE topics in weekly toolbox talks and must once a month conduct an off- the job topic relates to their health such as HIV, AIDS Awareness, Communicable Diseases, etc.

10.5 Alcohol and Drug Abuse Management



- A safety officer will physical examine on his/ her description that an employee on site it smelling or suspect to be under the influence of alcohol and be removed from site.
- That employee will be taken to a Doctor to conduct blood sample tests.
- A urine and saliva tests will be done as well.
- If positive result outcomes, the employee will be suspended from work.

10.6 Communications and Training

- Each supervisor shall personally conduct a Daily safe Task Instruction (DSTI) with his team, prior to the commencement of any work. This shall be done at the workplace during which he shall identify any risks present to all workers. A communication sheet and workers register are to be completed by every worker prior to starting work.

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- Toolbox talk topics will be conducted every morning in the Site camp by the Construction Manager 8(1) or Construction Supervisor CR 8(7) appointee] and he shall be assisted In this regard by the SHE Officer. Every person including Mandatory's must attend the daily toolbox talk. And sign an attendance register.
- Topics will be decided by the Construction Manager and SHE Officer and additional topics, including off-site topics, will be provided by the SHE Manager for discussion.
- A weekly communication will be carried out by the SHE Officer or Construction Manager to discuss the outcome of the inspections weekly by the SHE Officer and on the first week of every month will communicate the monthly audit outcomes carried out by the SHE official client representative.
- The statutory site safety meetings will be conducted monthly and the Construction Manager, all Supervisors including Mandatory's and Contractors and all Safety Representatives on-site are required to attend. All persons will be appointed and all their appointments will be on-site documentation.
- The Construction Manager is responsible to ensure that all work is undertaken with due regard to safety and health. He/She is to ensure that every supervisor including those of Mandatory's is issued with the latest revision of the Safety Plan, Fall Protection Plan, Risk Assessments and Method Statements which pertain to their work to be performed.
- The Construction Manager will attend all SHE Meetings and will address all issues raised in such meetings. The Construction Manager will give feedback on corrective actions. The Construction Manager will sign the minutes of these meetings and submit them to the SHE & Training Manager within 7 days of the meeting. SHE issues shall be the first item on the agendas for discussion at every meeting of any natures on the project to be discussed are incidents, accidents, state of SHE awareness on the project.
- Under no circumstances may any person who has not been appointed as a member of the safety committee be allowed to participate in the meeting. This shall include client representatives, it is recognized that the intention of the legislator was only to permit members and safety representatives to attend such moving except for technical advisors, who if present, may not be permitted to vote on any issue. The minutes of the safety meeting will be filed in the SHE file on site and copies sent to the SHE & Training Manager within seven days of the meeting, having been signed by the chairman, project manager and site manager.
- The following will be discussed:
 - SHE representative deviation reports
 - All Incidents including Near Misses Risk Assessment review Method Statement (SWP) review Statistics Targets and Objectives
 - SHE Awareness, incentives and awards
 - Upcoming high-risk activities
 - All Planned Job Observations and Visible Felt Leadership reports

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10.7 VISITORS/ SUPPLIERS

- All visitors on-site will report to the appointed SHE Officer for a safety Induction and who will provide them with the basic PPE required. The Site Traffic Control Plan must be developed for each site that forms part of the project, which will form part of the Site Layout to ensure that all visitors and suppliers do not interfere with the construction activities and are not exposed to hazards not associated with their work.
- No visitor may perform any construction work. Persons from training institutions who are at the project solely to provide training shall only be required to attend the visitor's Induction.
- Specialists who visit the site including for example Consulting Engineers or other Consultants and client representative who are there only to assess or repair specific equipment shall only be required to attend the visitors' Induction prior to been allowed to commence any work.

11. EMERGENCY AND INCIDENT MANAGEMENT

11.1 Incident/ Accident Management

- It is the duty of every employee to advise his immediate supervisor or SHE representative of any situation which is unsafe and the incident in which he is involved or becomes aware. The SHE representative shall immediately advise the supervisor of any such report.
- When a supervisor becomes aware of any unsafe condition or a report of any unsafe condition or situation is made to him he shall immediately intervene and if required he shall immediately stop the activity and take appropriate action to render the situation or condition safe prior to allowing the activity to recommence.
- An incident report shall be compiled by him/her in that regard. Where an individual or group of employees has committed any unsafe act or failed to comply with any Safety Health or Environment requirement, the supervisor shall furthermore be required to investigate and report such an employee with a view to initiate disciplinary action. Should any supervisor fail in this regard, he shall be disciplined in that he will be deemed to foil in his duties as is required by law.
- The Construction Manager shall report all incidents and accidents and near misses immediately to the SHE Manager and the Project Manager as well as the client representative. The Project Manager shall in turn advise the clients' Project Manager telephonically and by e-mail.
- The Construction Manager is responsible to ensure that an Incident Report is properly completed and sent to the Client within 24 hours of the time of an accident or injury.
- The Construction Manager shall also ensure that any other contractual requirement and any client requirement in this regard is adhered to.

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- The client's requirements as contained in the SHE Specification reporting, recording, investigating cost and follow-up of incidents and procedure for the effective management of SHE related incidents shall in addition also be strictly adhered to.
- All client representatives and client agents on the project are to report all incidents in which they are involved, immediately to our Site Manager who shall forthwith report them to the Project manager and SHE Manager. Any person found to have not reported any incident or who intentionally or negligently fails to follow these procedures shall be disciplined.
- Any Motor Vehicle Accident on any Public Road shall be reported to the Johannesburg Development Agency in accordance to the requirement as stipulated in the Road Traffic Act. All such accidents shall be reported as required but will not be recorded on the project statistics unless the driver is on duty and is injured.
- They shall be deemed to be covered In terms of the Road Accident Fund; however, they shall be reported to the insurance where medical treatment other than First Aid is required by the driver or any other employees. The client insurance shall decide based on the subsequent Investigation where to accept liability or to refer any claims to the Road Traffic Fund. Their decision will in no way impact our decision on whether or not the accident is recorded against the project statistics.
- The employees will be encouraged to report incidents through toolbox talks training; incident recalls communication. Daily Safety Task Instruction; SHE monthly meetings and through Veld Leadership.

11.2 Emergency Management

- The SHE Officer will ensure that all appointed First Aiders are in possession of, or have immediate access to a first aid kit that complies with the requirement of General Safety Requirements while on-site at all times.
- The SHE officer will ensure that the first aid kits are complete and contain all the necessary items listed inside the first aid box. The SHE officer shall examine all first aid kits monthly and complete the required check sheet in that regard. Contents shall at a minimum be based on legal requirements. Additional items may be included where deemed necessary, as may have been identified in any Risk Assessment.
- A local emergency services centre will be informed of the project and be sensitized about the risks associated with the construction work to be performed in order to facilitate effective response in case of an emergency.
- Whenever any material is removed from the first aid box such material will be replaced and & report indicating the use thereof will be forwarded to Head Office SHE Department within 2 days, even if used to assist a casualty who is not an employee.
- The SHE Officer will ensure that a valid copy of First Aiders Certificates in the SHE file at all times Other trained First Aiders on each team will be appointed in writing and will also be issued with or given access to First Aid kits.

11.3 Fire Prevention and Protection

- A Fire break will be established in line with the Environmental requirements to ensure that the runaway fires impact are minimized and prevented to affect the construction area. Appointment and Training on fire awareness and firefighting will be conducted to ensure that there is a trained and competent person for fire-fighting.

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- A smoking area will be demarcated and will be established away from objects, material that can facilitate fire spread. The smoking area will be equipped with a sand bucket for extinguishing cigarettes butts and will also be equipped with a serviced fire extinguisher

12. ASSESSMENTS AND MONITORING

A monitoring plan, schedule and programme will be established for this project which will entail all the internal and external audits, external inspections, internal inspection; planned task observations, SOC and Visible Field leadership.

12.1 Audits

The following audits will be carried out:

Internal Project audits shall be carried out on the project by the appointed SHE Manager monthly as a follow-up, but will carry out weekly inspections carried out by the SHE officer which will be used during the Client monthly audits. Internal project audits shall be carried out by the Principal Contractor SHE Manager at least four times during the project. Principal Contractor shall audit all Mandatory's at least once a month if applicable to ensure compliance.

Non-conformance's will be generated and issued to the Principal Contractor Project Manager based on the findings of the audits. The Principal Contractor Project Manager will ensure that these Non-conformance's are addressed and corrective action implemented.



12.2 General Inspections

The inspections will be carried out by supervisors daily using the DSTI and risk assessment review on tasks. The aim to ensure that all the risks are correctly evaluated, assessed and that the management plans are effective. The SHE Officer will carry out weekly inspections using a standard inspection checklist on every team and will communicate the outcomes with the supervisor.

12.3 Visible Felt Leadership

Visible commitment is essential to providing a safe and healthy work environment which is demonstrated at the highest level of management and that is reviewed to ensure continual improvement. Managers, supervisors and employees at all levels shall demonstrate their commitment and concern by:



- Ensuring that decisions and practices are consistent with the stated Principal Contractor Health and Safety Policy and objectives.
- Ensuring adequate resources are available to achieve the principals of the Principal Contractor Health and Safety Policy.
- Participating in risk assessments and the development of Method Statements (Safe work procedures)
- Ensures that safety issues are discussed by supervisors and employees daily through Daily Safe Task Instruction, Monthly SHE Meetings, Tool Box Talks, Incidents Communication and review and other Johannesburg Development Agency SHE engagement platforms
- Visiting all work areas regularly, perform inspections, observations and on the job communication.
- Wearing the correct Personal Protective Equipment at all time applicable for the task at hand.
- Commending safe work conditions and coaching employees who need to improve their safety performance
- Refusing to order or sanction short cuts to save time or money at the expense of safety or health.
- Placing SHE first on the agenda of all site meetings of any nature and discussing SHE performance.

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- Ensures that monthly SHE meetings are held and all the areas within SHE are covered, incidents are reviewed and the working programme is in line with SHE deliverables and that all SHE actions are followed up.
- Ensuring that all incidents are reported and investigated through the Johannesburg Development Agency incident management procedure within the SHE Spec using relevant templates such as flash reports, incident investigation report and follow-up procedures that Principal Contractor has implemented.
- Participating in accident investigation and ensuring that incidents are communicated as a duty to inform (Section 13, OHS Act 85 of 1993) and follow up to prevent reoccurrences.
- Foremen and Supervisor conducting and recording of Daily Safe task Instruction (DSTIs).
- Completion of regular Job Observation by the Site Manager, Safety Practitioners, Site Supervisors and Foremen.
- Never walking past unsafe behaviours or conditions without immediately correcting them.

12.4 Action Management

- Principal Contractor shall at all times strictly adhere to all legal requirements as contained in the OHS Act and relevant regulations and shall at times endeavour to comply with the clients' specifications. Regular weekly compliance inspections using a standard check sheet will be carried out by the SHE Officer on our own activities and the activities of all Mandatory's appointed by us. Where it is found that we have not complied to either legal or to other contractual.
- The SHE Manager will carry out monthly SHE Audits and will be discussed in the monthly SHE meetings.
- Any result of any Internal Compliance Audit by the SHE Manager with a score of 70% or less shall be reported to the Project Manager and Construction Manager. Non-Conformances and legal Contraventions raised during any audit will be communicated with Executive Management and a Root Cause Analysis will be conducted whereby preventive actions to be taken to prevent reoccurrence until it is closed.
- Formalised management reviews of the Health, Safety and Environmental Performance of the project will be undertaken on a 3 monthly basis by the Project Manager, Construction Manager, SHE officer and Principal Contractor SHE Manager. The purpose of the reviews will be to ensure the continuing suitability, adequacy and effectiveness of the SHE Plan. The following information shall be considered during the project management review.
 - Results of audits
 - Minutes of SHE Committee Meetings
 - SHE Performance Statistics
 - Incidents, accidents and near-miss reports
 - Nonconformance's and Corrective Action status
 - Follow-up actions from previous management reviews

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- Changing circumstances such as a change in legal requirements or change in the Clients requirements.

12.5 SHE Performance Reporting

Statistics shall be reported in line with the client's requirement of every Wednesday of all the Man Hours. In summary, the construction Manager will submit statistics to both the Project Manager and SHE Head Office (Administration) by no later than 08:00 each Wednesday using the Johannesburg Development Agency reporting template for the preceding week. This shall be on the prescribed form and shall include total hours worked during the previous week, by Mandatory's and third parties, and shall include all incidents and accidents and training provided.

It is imperative to note that all time worked on the project by the client or the client's agent shall be included in our statistics report and therefore the client or his agents' site representative are to be required to provide a summary of hours worked to be included in the report.

13. DEMOBILISATION

13.1 Commissioning and Handover



The Principal Contractor will compile the commissioning risk assessment and compile a commissioning plan before the commissioning of the project. These will include the submission of Safety, health and Environmental documentation as well as the facilities. The commission risk assessment and commission plan will be submitted to the Johannesburg Development Agency Safety official for review and approval.

13.2 Site Decommissioning

The site decommissioning risk assessment and site decommissioning plan will be compiled and will be submitted to the Johannesburg Development Agency Safety Official for approval. Once approved, the Principal Contractor will then start with decommissioning as well as the SHE staffing Plan.

14. NON-CONFORMANCE AND PENALTIES

The client will issue an NCR to the contractor when the contractor is in deviation with the Health and Safety Specification or when the construction work on-site fails to meet the Health and Safety quality standards. The OHS Client Agent will issue an NCR for any risks and findings that are in contravention of the OHS Plan, Risk Assessment or client specification. If the issue is not compliant after 3 (three) NCR's, the client OHS Agent will motivate to the client for penalties. However, any issue that is of high risk will immediately result in work stoppage that is not reimbursable. Should any issues persist, The client OHS Agent will push for the removal of the appointed persons after consultation with the Project Manager of the project.

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15. GENERAL



Principal Contractor shall comply with the requirements of Occupational Health and Safety Act 85 of 1993. Any contraventions of the said Act or the safety measures as contained in the safety file are noticed, the works will be stopped immediately and the contravention reported to the SHE Manager who shall institute an investigation. Authority for the works to continue will only be given after the SHE Manager and Johannesburg Development Agency Safety Official are satisfied that the task is able to carry on safely.

16. COVID-19 Preventative Measures

- There is one entry point to the site where all employees will be screened daily upon arrival.
- A record of all the information acquired will be kept on the DSTI.
- Appointed personnel will conduct a Daily Safety Task Instruction (DSTI), record individual temperatures and ask for any COVID 19 vital signs for all the employees under their area of responsibilities.
- Every employee will be required to sign the DSTI document on the acknowledgement of training confirming that all the information they are given is true to the best of their knowledge on COVID 19 vital sign.
- All employees will be requested to sanitize their hands at the site during screening before the start of the shift.
- The security will be responsible to ensure that every person entering the premise have been checked for COVID 19 vital signs (temperature and declaration) and sanitize their hands before proceeding into their offices. This will take place every day upon arrival on-site. There will be a register of the screening results kept.
- Sufficient alcohol-based sanitiser will be kept out in the open to ensure that it's easily available to all employees.
- Any abnormalities detected during screening will be dealt with according to the emergency management plan.
- Employees will be encouraged not to share tools where applicable or, disinfect the tools and equipment before use.

Abnormalities detected during screening (Temperatures at or above >37.5°C/ COVID 19 signs)

- Employees found to have elevated temperatures or similar COVID 19 vital signs (fever, headache, joint and muscle aches, sore throat, weakness, diarrhoea, vomiting, stomach pain) will immediately be isolated from the other workers for further examination and interview to determine the possible contact/ travel history by the OMP. Such employees will be isolated in an area designated by the contractor.
- The Contracts Manager will be informed immediately and inform the OMP about the abnormalities and request him/her to take full charge but informing the contracts manager about all the proceedings.
- The suspected employee will be kept in isolation until the ambulance service arrives.
- Once the suspected employee is removed from the isolation point, the area will be cleaned, disinfected thoroughly, waste material placed inside a toxic waste container and disposed of by a registered waste removal company.
- High-pressure jet spray shall not be used in confined spaces during cleaning.

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- Physical material like blood and vomitus must be first cleaned up and removed before terminal cleaning commences.
- Containers with secretions, excretions, and other waste products such as vomitus and blood should be flooded with a copious amount of disinfectant for at least 30 minutes.

Working on Site

- Tools and equipment will be wipe down with a disinfectant solution before it is used, during use and after use to make sure that when tools exchange hands it is clean and disinfected.
- Employees will work not close together and spaces of 2 meter will be implemented between employees. This will be mandatory to make sure all employees stay a safe distance from each other.
- Activities that where human contact is unavoidable, should be postponed and avoided as far as possible. If is it vital for human contact, extra special care should be taken in terms of wearing gloves, good quality face masks.
- It is the responsibility of every employee to make sure he or she is wearing the PPE issued and use correctly at all times.
- It is the responsibility of every employee to report any contact with a COVID-19 infected person before the commencement of work daily
- In any case of cuts or bruises must be attended to immediately
- Thero Services issued permit is to be carried by the employee at all times
- Smoking on-site is prohibited
- There will be no congregation of employees during lunchtime.



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ANNEXURE: Relevant Summarised Project Legal References

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation (CR) 4	Notice of carrying out Construction work	Department of Labour notified Copy of Notice available on Site
General Admin. Regulation 4	*Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations on site. Readily available for perusal by employees.
COID Act Section 80. CR 5 (1)(j)	*Registration with Compels. Insurer	Written proof of registration/Letter of good standing available on Site
Construction. Regulation 4 & 5(1)	H&S Specification & Programme	H&S Spec received from Client and/or its Agent on its behalf OH&S programme developed & Updated regularly
Section 8(2)(d) Construction. Regulation 9	*Hazard Identification & Risk Assessment	Hazard Identification carried out/Recorded Risk Assessment and – Plan drawn up/Updated RA Plan available on Site Employees/Sub-Contractors informed/trained
Section 16(2)	*Assigned duties (Managers)	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Construction. Regulation(CR) 8(1)	Designation of Person Responsible on Site	Competent person appointed in writing as Construction Supervisor with job description
Construction. Regulation 8(7)	Designation of Assistant for above	Competent person appointed in writing as Assistant Construction Supervisor with job description
Section 17 & 18 General Administrative Regulations 6 & 7	*Designation of Health & Safety Representatives	More than 20 employees - one H&S Representative, one additional H&S Rep. for every 50 employees or part thereof. Designation in writing, period and area of responsibility specified in terms of GAR 6 & 7 Meaningful H&S Rep. reports. Reports actioned by Management.
Section 19 & 20 General Administrative Regulations 5	*Health & Safety Committee/s	H&S Committee/s established. All H&S Reps shall be members of H&S Committees Additional members are appointed in writing. Meetings held monthly, Minutes kept. Actioned by Management.
Section 37(1) & (2)	*Agreement with	Written agreement with (Sub-)Contractors



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	Mandatories/ (Sub-)Contractors	List of (Sub-)Contractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Supervisor designated Written arrangements re. H&S Reps & H&S Committee Written arrangements re. First Aid
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	*Reporting of Incidents (Dept. of Labour)	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1?) (WCL 1 or 2) and to the Client and/or its Agent on its behalf Cases of Occupational Disease Reported Copies of Reports available on Site Record of First Aid injuries kept
General Admin. 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 the investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at H&S Committee meeting Action taken by Site Management.
Construction. Regulation 10	Fall Prevention & 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/updated Available on Site
Construction. Regulation 11	Structures	Information re. the structure being erected received from the Designer including: - geoscience technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers/hazards/special measures to construct safely Risk Assessment carried out A method statement is drawn up All above available on Site Structures inspected before each shift. Inspections register kept
Construction. Regulation 16	Scaffolding	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site



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		Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept
Construction. Regulation 19	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. Inspections register kept.
Construction. Regulation 21	Explosive Powered Tools	Competent person appointed to control the issue of the Explosive Powered Tools & cartridges and the service, maintenance and cleaning. Register kept of above Empty cartridge cases/nails/fixing bolts returns recorded Cleaned daily after use Work areas are demarcated
Construction. Regulation 22 Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - daily by operator - Tower Crane/s - after erection/6monthly - Other cranes - annually by comp. person - Lifting tackle(slings/ropes/chain slings etc.) - daily or before every new application
Construction. Regulation 24 Electrical Machinery Regulations 9 & 10/ Electrical Installation Regulations	*Inspection & Maintenance of Electrical Installation & 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 & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools, electric lights and extension leads must be uniquely identified/numbered. Weekly visual inspection by User/Issuer/Storeman. Register kept.



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Construction. Regulation 28 General Safety Regulation 8(1)(a)	*Designation of Stacking & Storage Supervisor.	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site
Construction. Regulation 29/ Environmental Regulation 9	Designation of a Person to Co-ordinate Emergency Planning And Fire Protection	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practiced - Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out All Fire Extinguishing Equipment identified and on the register . Inspected weekly. Inspection Register kept Serviced annually
General Safety Regulation 3	*First Aid	Every workplace provided with a sufficient number of First Aid boxes. (Required where 5 persons or more are employed) First Aid freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aid Officials and Certificates Name of person/s in charge of First Aid box/es displayed. Location of First Aid boxes clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries
General Safety Regulation 2	Personal Safety Equipment (PSE)	PSE Risk Assessment carried out Items of PSE prescribed/use enforced Records of Issue kept Undertaking by Employee to use/wear PSE PSE remain property of Employer, not to be removed from premises GSR 2(4)
General Safety Regulation 9	*Inspection & Use of Welding/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



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		<p>All new vessels checked for leaks, leaking vessels NOT taken into stock but returned to the supplier immediately</p> <p>Equipment identified/numbered and entered into a register</p> <p>Equipment inspected weekly. Inspection Register kept Separate, purpose-made storage available for full and empty vessels</p>
<p>Hazardous Chemical Substances (HCS) Regulations Construction Regulation 23</p>	<p>*Control of Storage & Usage of HCS and Flammables</p>	<p>Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS (including Flammables)</p> <p>Written Proof of Competence of above appointee available on Site</p> <p>Risk Assessment carried out</p> <p>Register of HCS kept/used on Site</p> <p>Separate, purpose-made storage available for full and empty containers</p>
<p>Construction. Regulation 23</p>	<p>Construction Vehicles & Earth Moving Equipment</p>	<p>Operators/Drivers appointed to:</p> <ul style="list-style-type: none"> - Carry out a daily inspection prior to use - Drive the vehicle/plant that he/she is competent to operate/drive <p>Written Proof of Competence of above appointee available on Site. Record of Daily inspections kept</p>
<p>General Safety Regulation 13A</p>	<p>*Inspection of Ladders</p>	<p>Competent person appointed in writing to inspect Ladders</p> <p>Ladders inspected at arrival on-site and weekly thereafter. Inspections register kept</p> <p>Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in a register</p>
<p>General Safety regulation 13B</p>	<p>Ramps</p>	<p>Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept. Daily inspected and noted in a register</p>



Johannesburg Development Agency Social
Development Northern farm



PALLADIUM RISK MATRIX

PROBABILITY (P)	SEVERITY (S)				FREQUENCY (F)
	EFFECT		Productivity (PR)	Cost Implications (C)	
	Injury / Illness (I)	Environmental Effect (E)			
0. No exposure to the Hazard can arise during any single task.	0. No First Aid or Medical Attention necessary. No contact or injury can occur.	0. No Environmental Effect.	0. No Lost time.	0. Zero cost implication.	0. Hazard arises at period greater than 5 years.
1. Highly Improbable that exposure to the Hazard will arise during any single task.	1. First Aid or Medical Attention.	1. Insignificant Effect - Proper & immediate cleanup will eliminate effect immediately.	1. Loss of Less than 1 man shift	1. R0 - R999	1. Hazard arises every 5 years
2. Unlikely that exposure to the Hazard will arise during any single task.	2. 1-13 Days off Normal Duty with Full Recovery	2. Short Term - 1 day to 6 months	2. Loss of 1 day production on team	2. R1000 - R9999	2. Hazard arises once a year
3. Possible that exposure to the Hazard will arise during any single task.	3. 14 Days or more off Normal Duty with Full Recovery	3. Medium Term - 6 months to 24 months	3. Loss of 2 days to 7 days production on team.	3. R10 000 - R99 999	3. Hazard arises once a month
4. Probable that exposure to the Hazard will arise during any single task.	4. Slight or Severe Permanent Disability	4. Long Term - 24 months to 5 years	4. Loss of 8 days to 30 days production on team.	4. R100 000 - R999 999	4. Hazard arises once a week
5. Almost Certain or Inevitable that exposure to the Hazard will arise during any single task.	5. Fatality	5. Permanent - more than 5 years	5. Loss of 1 days production on Project	5. R1 000 000 +	5. Hazard is permanent

RISK RESULTS (Expressed as a %)

Low	Medium	High	Extremely High
0-40%	41-60%	61-80%	81-100%

ACTION

LOW - Monitor and review every 12	MEDIUM - Monitor and Review every 6 months - PRIORITY 3.	HIGH - Monitor and Review 3 months	EXTREMELY HIGH - STOP ALL WORK - Take immediate action. Re-assess. -PRIORITY 1
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Definition of Review - revisit to establish if valid - if changes required, then new written revision will be issued.

4. Transportation of material/equipment/ tools/containers to/from site	4.1A Untrained driver	4.2A Fatalities	S Construction Regulation 23	Y	A	4	4	4	4	5	84	EH	4.3A Driver to be licensed, authorised. Induction to be done.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries	H OHS Act Section 8	Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M	OHS Agent	
	Transportation of material/equipment/ tools/containers to/from site	4.2C Property Damage	National Road Traffic Act	Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
	4.1B Unroadworthy vehicle	4.2D Civil claims		Y	A	4	4	4	4	5	84	EH	4.3B Vehicle to be inspected every time before coming onto site. Pre use inspection to be done.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2E Reputational harm		Y	A	4	4	4	4	5	84	EH	Vehicle to be fitted with a orange rotating light.									
	4.1C Material/equipment/containers not secured properly	4.2C Property Damage		Y	N	3	4	4	4	5	80	H	4.3C Material/equipment to be properly secured. No "satan" type levers. Load to be inspected before coming onto site.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	N	3	4	4	4	5	80	H		2	3	2	2	3	48	M		
		4.2F Property loss due to Theft		Y	N	3	4	4	4	5	80	H		2	3	2	2	3	48	M		
	4.1D Unsafe road conditions	4.2A Fatalities		Y	A	4	4	4	4	5	84	EH	4.3D Driver to adhere to speed limits and Road Signage. If driving in inclement weather conditions, driver to drive according to conditions.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2C Property Damage		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2D Civil claims		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2E Reputational harm		Y	A	4	4	4	4	5	84	EH	4.1E Driver to adhere to speed limits and road signs. If driving on site vehicle to be escorted to the designated area. Head Lights to be on, as well as strobe light. Flagman to be identified and visible.	2	3	2	2	3	48	M	Contractor	Ongoing
	4.1E Collision with other vehicles/property	4.2A Fatalities		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2B Injuries		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2C Property Damage		Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
	4.1F Theft	4.2A Fatalities		Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
		4.2C Property Damage		Y	A	5	4	4	4	5	88	EH	4.3F When leaving departure point, driver is to drive straight to site. If possible, drive during day time on pre-determined routes.	2	3	2	2	3	48	M		
		4.2E Reputational harm		Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
		4.2F Property loss due to Theft		Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
	4.1G Talking on cell phone while driving	4.2A Fatalities		Y	A	4	4	4	4	5	84	EH	4.3G Driver to wait until he arrives at the designated area. No talking on cell phone while driving.	2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
		4.2C Property Damage		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
	4.1H Driving while under the influence of alcohol/c	4.2A Fatalities		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	A	4	4	4	4	5	84	EH	4.3H Random alcohol test with a breathlyser to be done on drivers w arriving on site everyday. Induction to be done.	2	2	3	2	3	48	M		
		4.2C Property Damage		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
	4.1I Speeding	4.2A Fatalities		Y	A	4	4	4	4	5	84	EH	4.3I Driver to adhere to on-site speed limit of ~8km/h in congested ar	2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
		4.2C Property Damage		Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
5. Site Establishment																						
Sanitation Facilities	5.1A Unauthorised access onto property	5.2A Injuries	S Facilities Regulations	Y	A	4	5	4	5	5	92	EH	5.3A Client to grant access in writing to the contractor. Public Participation and consultation meetings to be held with the community informing them about the intended works.	2	2	3	2	3	48	M	Contractor	Ongoing
Eating area (Dining rooms)		5.2B Property Damage		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	OHS Agent	
Designated Parking areas		5.2C Civil Unrest	H General Administrative Regulations	Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	Client	
Site Office		5.2D Theft		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
Lockable flammable materials storage		5.2E Reputational Harm		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
Tools Storage area																						
Drinking water	5.1B Poor planning of the project leading to incomplete establishment of the construction area	5.2A Injuries	OHS Act Section 8	Y	A	4	5	4	5	5	92	EH	5.3B Activity to be planned properly and instructions to be given to a person nominated by the Contractor and the Client's Representative	2	2	3	2	3	48	M	Contractor	Ongoing
Ergonomics		5.2B Property Damage		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	OHS Agent	
Changing rooms		5.2C Civil Unrest	CR 7	Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		5.2D Theft		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		5.2E Reputational Harm		Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	5.1C Poor Communication	5.2A Injuries		Y	N	5	4	5	5	5	96	EH	5.3C Formal communication to be evident between the contractor and the Client.	2	2	3	2	3	48	M	Contractor	Ongoing
		5.2B Property Damage		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
		5.2C Civil Unrest		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2D Theft		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2E Reputational Harm		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
	5.1D Damaging existing services e.g. sewage, powercables, subsoil drains system during connections of the services to the site camp	5.2A Injuries	Facilities Regulations	Y	N	5	4	5	5	5	96	EH	5.3D Where possible existing service provider to be used to ensure knowledge of existing services. If not, a alternative service provider to be used and to be monitored.	2	2	3	2	3	48	M	Contractor	Ongoing
		5.2B Property Damage		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
		5.2C Civil Unrest		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2E Reputational Harm		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2F Acute and Chronic Illnesses		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
	5.1E Poor refuse removal/No removal of waste during the demolishing of the excavations and site concrete pallisade wall	5.2A Injuries		Y	N	5	4	5	5	5	96	EH	5.3E Refuse removal service provider to be appointed upon establishment. Waste removal/ disposal slips to be kept with the OHS File on site.	2	2	3	2	3	48	M	Contractor	Ongoing
		5.2B Property Damage		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
		5.2C Civil Unrest		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2E Reputational Harm		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2F Acute and Chronic Illnesses		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
	5.1F Employees untrained and incompetent utilised during the establishment phase from the principal contractor or suppliers	5.2A Injuries		Y	N	5	4	5	5	5	96	EH	5.3F Employees assisting with this activity to be trained- documented on the Job training to be done by the supervisor.	2	2	3	2	3	48	M	Contractor	Ongoing
		5.2B Property Damage		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
		5.2C Civil Unrest		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.2E Reputational Harm		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
													5.3G All tools to be inspected everyday prior to use as well as equipment. Material used to be in accordance with designs specifications and the relevant SANS code.	2	2	3	2	3	48	M	Contractor	Ongoing
	5.1G Tools/material/equipment unsafe/poor	5.2A Injuries		Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		

8. Loading/offloading of plant from lowbed	8.1A Sub standard lowbed	8.2A Fatalities	S	Construction Regulation 23	Y	N	4	5	4	5	5	92	EH	8.3A Lowbed to be authorised, inspected and approved.	2	2	3	2	3	48	M	Contractor	Ongoing
	Loading/Offloading of plant from lowbed	8.2B Injuries	H	General Machinery Regulations	Y	N	4	5	4	5	5	92	EH	Pre-use checks to be done and Maintenance records to be available on request.	2	2	3	2	3	48	M	OHS Agent	
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	Consulting Engineer	
	8.2D Civil Claims				Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	8.2E Reputational harm			OHS Act Section 8	Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
				CR 27																			
	8.1B Untrained driver	8.2A Fatalities		CR 28	Y	N	4	5	4	5	5	92	EH	8.3B Driver to be trained, appointed and authorised.	2	2	3	2	3	48	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH	Minimum one Planned Task Observation on driver to be done.	2	2	3	2	3	48	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	8.1C Poor ground conditions	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3C Ground conditions to be checked prior to loading/offloading from lowbed. If ground conditions are poor, alternative area to be allocated.	2	2	3	2	3	48	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	8.1D Plant falling from lowbed while loading/ offloading to/ from lowbed	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3D Driver of plant being loaded/offloaded to be aware of surroundings and dimensions of lowbed. Signal man to assist but to stand in front of the plant to enhance visibility. Secondary signalman to stand at the rear to communicate to the primary signalman/ operator but not to stand closer than 5 meters from the plant.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1E Unauthorised access into loading zone	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3E No unauthorised employees to be within 5 meters from lowbed and access to be controlled.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1F Driving in inclement weather conditions	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3F Drivers to drive according to conditions. Driver to adhere to speed limits and signage.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1G Poor communication	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3G Rigger and Operator to communicate via hand signals and use whistle. Radios to be used if line of sight is obstructed	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1H Oil/diesel spill	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3H Drip tray and rags to be available on plant and lifting machines. Operators to be trained on a spillage procedure.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1I Driver not medically fit	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3I Driver to have passed Medical Evaluation and to be declared medically fit by an OHP. Proof of medicals to be always available and recorded in the OHS file on site and produced on request.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1J Driver under the influence of alcohol/ drugs	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3J Driver not allowed to drive while under the influence alcohol, drugs or any other toxic substance. Random tests to be done and records to be always kept in the OHS file on site	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1K Driver under medication	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3K Driver to declare if he/ she is using medication especially if alcohol is in the medication. Proof of the medication to be evident e.g. Box with the contents of the medication.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1L Fatigue	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3L Prior to driving the driver to ensure at least 8 hours rest of 24 hours if fatigue persists, driver to consult a doctor immediately to avoid unnecessary incidents/accidents on site.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
9. Housekeeping																							
Stacking & Storage of material/equipment.	9.1A Nip/pinch points	9.2A Injuries	S	Construction Regulation 28	Y	N	4	4	4	4	4	80	H	9.3A Employees to wear correct PPEs such as leather gloves. Emph to ensure safe placement of hands when offloading.	3	2	2	2	3	48	M	Contractor	Ongoing
		9.2D Cuts	H	OHS Act Section 8	Y	N	4	4	4	4	4	80	H		3	2	2	2	3	48	M	OHS Agent	
				CR 27																		Consulting Engineer	
	Stacking & Storage of material/equipment.	9.1B Unsafe stacking practices	9.2A Injuries		Y	N	4	5	5	5	5	96	EH	9.3B Employees to be trained in the proper stacking Procedure.	3	2	2	2	3	48	M	Contractor	Ongoing
		9.2B Fatalities		Y	N	4	5	5	5	5	5	96	EH	The base of a stack to be 3 times the height. Walkways of at least 1,5 m to be left between stacks. Dunnage/sandbags underneath stacks to be placed at the edges to prevent tripping. No protruding dunnage/ sandbags in walkways.	3	2	2	2	3	48	M		
		9.1C Snake/insect bites	9.2A Injuries		Y	N	4	5	5	5	5	96	EH	9.3C Employees to check area before handling material.	3	2	2	2	3	48	M	Contractor	Ongoing
		9.2B Fatalities			Y	N	4	5	5	5	5	96	EH	Do visual inspection of stacks, stamp feet, turn material over with plant or feet. Hooks to be used to minimize exposure to insects/ snakes. All grass/ weeds to be kept short.	3	2	2	2	3	48	M		
		9.2C Acute and chronic illness			Y	N	4	5	5	5	5	96	EH		3	2	2	2	3	48	M		
	9.1D Untrained employees	9.2A Injuries			Y	A	4	5	5	5	5												

			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	manner as not to pose a tripping hazard. No coiled	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH	extensions.	2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1K Failure to lock out	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3K Employee to be trained in the Lock out Procedure. If	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	not working with the machine, it is to be unplugged.	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1L Electrical Shock	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3L All electrical equipment to be inspected before use	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	daily. Also to be inspected monthly by a trained, qualified, competent	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH	and appointed personnel/employee and records to be kept on-site.	2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
13. Use of ladder																								
		13.1A Unsafe ladder	13.2A Injuries	S	General Safety Regulation 13	Y	N	4	4	4	5	4	84	EH	13.3A Ladders to be inspected by a appointed person	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage	H	OHS Act no 85 of 1993	Y	N	4	4	4	5	4	84	EH	monthly and records to be kept on-site.	2	2	3	3	2	48	M	OHS Agent	
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1B Poor ground conditions	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3B Ground conditions to be inspected before ladder	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	is to be used.	2	2	3	3	2	48	M		
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1C Employees falling from ladder while ascending/descending	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3C Employees to ensure firm footing when climbing and	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	maintain 3-point contact.	2	2	3	3	2	48	M		
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1D Unsafe use of stepladder	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3D One employee holds the ladder at the bottom while	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	other employee climbs the ladder. Top part of the ladder to	2	2	3	3	2	48	M		
														exceed the landing point by at least 900mm. No ladder will										
														be used as a working platform.										
						Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1E Ladder tipping over	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3E One employee to hold on to ladder while other	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	employee climbs. Ladder to be secured at the bottom when	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH	climbing into/ out of an excavation.	2	2	3	3	2	48	M		
		13.1F Slipping while climbing	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3F Employee to ensure firm footing. Not to climb the ladder during	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	wet weather conditions or where neither the ladder or the safety boots	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1G Reflection of sun from ladders	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3G Employees to ask for dark safety goggles where the	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	reflection is too strong.	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1H Climbing with tools/nuts/bolts in hand	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3H Bolt bags are to be used. No employee will be	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	allowed to climb a ladder with any tools in his hand.	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1I Metal ladders near electric lines	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3I Wooden ladders to be used when working in the	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	close proximity of electric lines.	2	2	3	3	2	48	M		
			13.2E Electrical shock			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
			13.2F Severe Burns			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
14. Fall Risk on elevated positions																								
		14.1A Tools/Equipment/Material falling	14.2A Fatalities	S	Construction Regulation 10	Y	N	5	4	5	5	5	96	EH	14.3A All tools to be fitted with lanyards and to be worn	4	3	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries	H		Y	N	5	4	5	5	5	96	EH	around wrist. Chin straps to be used. Heavier equipment/tools to be t	4	3	3	3	4	68	H	OHS Agent	
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	the structure. Bolt bags to be used when bolts are taken up.	4	3	3	3	4	68	H	Consulting Engineer	
														No loose, nuts, bolts, tools or any other objects on the structure/edges.										
		Working at height																						
		Retaining wall works																						
		Earthworks																						
		Concrete and reinforcement works	14.1B Employee untrained			Y	N	5	4	5	5	5	96	EH	14.3B Employee to be trained and to be trained, competent, medical	4	3	3	3	4	68	H	Contractor	Ongoing
			14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	authorised to work at Heights. Training provider to be SAQA accredi	4	3	3	3	4	68	H		
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
		Finishing	14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
		14.1C Employee not hooked	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3C Employees to be hooked by safety harness at all times -100%	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	Additional slings to be tied around larger items and employees to hoc	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	onto the slings to prevent "Backlashing" on the lanyards	3	4	3	3	4	68	H		
		14.1D Throwing objects	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3D Objects are not to be thrown overboard from elevated position	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	or to each other. No horseplay to be allowed while working on-site.	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH		3	4	3	3	4	68	H		
		14.1E Employee fear of heights	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3E Employee to declare to supervisor if any medical	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	condition or medication is used. Employee to complete	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	Heights Questionnaire.	3	4	3	3	4	68	H		
		14.1F Not medically fit	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3F Entrance medical. Report any medical condition or	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	medication to supervisor. Not to work at Heights when on	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	medication.	3	4	3	3	4	68	H		
		14.1G No access provided or in use	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3G All ladders to be secured and extend at least 900mm	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	past landing. Angle ladder correctly. All ladders to be on	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	register and to be inspected daily before use, and monthly	3	4	3	3	4	68	H		
														by a appointed person.										
		14.1H Unsafe work platforms	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3H All elemental platforms must have no openings in	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	floor. Surface to be oil free. No loose material and	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4	5	5	5	96	EH	equipment lying around on platforms or on the edge of an	3	4	3	3	4	68	H		
			14.2E Slips/Trips			Y	N	5	4	5	5	5	96	EH	excavation.	3	4	3	3	4	68	H		
		14.1I Incorrect use of Safety Harness	14.2A Fatalities			Y	N	5	4	5	5	5	96	EH	14.3I Do not hook lanyard to each other. Ensure safety	3	4	3	3	4	68	H	Contractor	Ongoing
			14.2B Injuries			Y	N	5	4	5	5	5	96	EH	harness adjusted to fit person properly. Only hook onto	3	4	3	3	4	68	H		
			14.2C Temporary or Permanent disability			Y	N	5	4															



20. Emergency Preparedness	Emergency Preparedness Plan	20.1A Lack of emergency management plan	20.2A Fatalities	S OHS Act Section 8	Y	N	4	5	4	5	5	92	EH	20.3A Comprehensive site specific emergency management plan to be drafted. Emergency drills to be conducted to test efficiency of emergency system.	2	2	2	2	3	44	M	Contractor	Ongoing
		20.2B Injuries	H GSR 3	Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M	OHS Agent			
		20.2C Property Damage	OHS General Safety Regulations	Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M	Consulting Engineer			
		20.2D Reputational Harm		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.1B Lack of knowledge	20.2A Fatalities		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M	Contractor	Ongoing	
		20.2B Injuries		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.2C Property Damage		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.2D Reputational Harm		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.C Lack of signage	20.2A Fatalities		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M	Contractor	Ongoing	
		20.2B Injuries		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.2C Property Damage		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
		20.2D Reputational Harm		Y	N	4	5	4	5	5	92	EH	2	2	2	2	3	44	M				
21. Electrical Works	Electrical Installations	21.1A Untrained employees	21.2A Fatalities	S Electrical Installation Regulations	Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries	H Regulations	Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H	OHS Agent			
		21.2C Electrical Shock and Burns	Construction Regulations 24	Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H	Consulting Engineer			
		21.2D Property Damage		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2E Reputational Harm		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.1B Sub standard equipment	21.2A Fatalities		Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2C Electrical Shock and Burns		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2D Property Damage		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2E Reputational Harm		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.1C Unsafe conditions	21.2A Fatalities		Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Instruction register to show that all the potential risks associated with the task of have been clearly communicated to them and they have understood everything.	4	3	4	4	4	H	H	Contractor	Ongoing
		21.2B Injuries		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	H	H				
		21.2C Electrical Shock and Burns		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	H	H				
		21.2D Property Damage		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	H	H				
		21.2E Reputational Harm		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	H	H				
		21.1D No lock out procedure	21.2A Fatalities		Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2C Electrical Shock and Burns		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2D Property Damage		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2E Reputational Harm		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.1E No lock out done	21.2A Fatalities		Y	N	5	5	5	4	5	96	EH	21.3E All energized source to be locked out following the lock out procedure before work commences.	4	3	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2C Electrical Shock and Burns		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
		21.2D Property Damage		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H				
	21.1F Incorrect design	21.2A Fatalities		Y	N	5	5	5	4	5	96	EH	21.3F Only newest revision drawings to be used. All installations to have certificates of compliance.	4	3	4	4	4	76	H	Contractor	Ongoing	
	21.2B Injuries		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H					
	21.2C Electrical Shock and Burns		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H					
	21.2E Poor Quality Product		Y	N	5	5	5	4	5	96	EH	4	3	4	4	4	76	H					
22. Hand Tools	Hand Tools Usage	22.1A Unsafe hand tools	22.2A Injuries	S OHS Act Section 8	Y	N	4	4	4	4	5	84	EH	22.3A All hand tools to be inspected before use. All unsafe hand tools to be send for repairs or scrapped.	2	3	2	2	2	44	M	Contractor	Ongoing
		22.2B Property Damage	H Construction Regulations	Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M	OHS Agent			
		22.2C Temporary or Permanent Disability		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.2D Reputational Harm		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.1B Incorrect use	22.2A Injuries		Y	N	4	4	4	4	5	84	EH	22.3B Hand tools only to be used for their designed purpose.	2	3	2	2	2	44	M	Contractor	Ongoing
		22.2B Property Damage		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.2C Temporary or Permanent Disability		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.2D Reputational Harm		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.1C Home made tools	22.2A Injuries		Y	N	4	4	4	4	5	84	EH	22.3C No modified or home made tools to be used. Defective tools to be send for repairs and not to be used.	2	3	2	2	2	44	M	Contractor	Ongoing
		22.2B Property Damage		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.2C Temporary or Permanent Disability		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
		22.2D Reputational Harm		Y	N	4	4	4	4	5	84	EH	2	3	2	2	2	44	M				
23. Use of electrical equipment	General electrical work	23.1A Unsafe equipment	23.2A Injuries	S OHS Act 85 of 1993	Y	N	5	4	5	5	5	96	EH	23.3A Equipment to be inspected monthly by a competent person. Pre use inspection to be done each time before use. Defective equipment to be send for repairs and not to be used.	4	3	3	3	4	68	H	Contractor	Ongoing
		23.2B Fatalities	H OHS Act CR 24	Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H	OHS Agent			
		23.2C Electric Shock and Burns	Electrical Installation Regulations	Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H	Consulting Engineer			
		23.2D Property Damage	Electrical Machinery Regulations	Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2E Tripping and Falling		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2F Third party claims		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2G Temp. or Perm. Diasability		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.1B Improper use	23.2A Injuries		Y	N	5	4	5	5	5	96	EH	23.3B Equipment only to be used for the designed purpose(s).	4	3	3	3	4	68	H	Contractor	Ongoing
		23.2B Fatalities		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2C Electric Shock and Burns		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2D Property Damage		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
		23.2G Temp. or Perm. Diasability		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H				
	23.1C Electrical equipment being used in wet conditions	23.2A Injuries		Y	N	5	4	5	5	5	96	EH	23.3C Electrical equipment not to be used in wet conditions.	4	3	3	3	4	68	H	Contractor	Ongoing	
	23.2B Fatalities		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2C Electric Shock and Burns		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2D Property Damage		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.1D Electrical equipment not routed safely	23.2A Injuries		Y	N	5	4	5	5	5	96	EH	23.3D All cables to be routed safely away from walkways. All cables to be kept together when routed.	4	3	3	3	4	68	H	Contractor	Ongoing	
	23.2B Fatalities		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2C Electric Shock and Burns		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2D Property Damage		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2G Temp. or Perm. Diasability		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.1E Untrained operator	23.2A Injuries		Y	N	5	4	5	5	5	96	EH	23.3E Operators of equipment to be trained in the operations and inspections and monitoring.	4	3	3	3	4	68	H	Contractor	Ongoing	
	23.2B Fatalities		Y	N	5	4	5	5	5	96	EH	4	3	3	3	4	68	H					
	23.2C Electric Shock and Burns		Y	N	5	4	5	5	5	96													

24. Mobile plant	Driving Operating	24.1A Unsafe plant	24.2A Injuries	S	Driven machinery regulations	Y	N	5	4	4	5	5	92	EH	24.3A All plant to be checked on a daily basis before work commences by a competent, trained and qualified operator, and findings to be logged in a register.	3	3	3	3	3	3	60	M	Contractor	Ongoing		
			24.2B Fatalities	H	OHS Act CR 20 and 23	Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	3	60	M	OHS Agent			
					24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
					24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
				24.1B Improper use	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3B Plant only to be used for the designed purpose.	3	3	3	3	3	3	60	M	Contractor	Ongoing
					24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
				24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
				24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
			24.1C No valid medical certificate	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3C All operators to have valid medical certificates. Medical Certificates to be evident on-site and to be available on request.	3	3	3	3	3	3	60	M	Contractor	Ongoing	
				24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
				24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
				24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
			25.1D No plant management plan	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3D Plant management plan to be drafted to indicate service intervals and travel routes.	3	3	3	3	3	3	60	M	Contractor	Ongoing	
				24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
				24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M				
			25.1E Untrained operator	24.2A Injuries			Y	N	4	5	5	5	5	96	EH	24.3E All operators to be trained and competent.	3	3	3	3	3	3	60	M	Contractor	Ongoing	
				24.2B Fatalities			Y	N	4	5	5	5	5	96	EH	Competency certificates to be evident on request.	3	3	3	3	3	3	60	M			
				24.2C Third party claims			Y	N	4	5	5	5	5	96	EH		3	3	3	3	3	60	M				
				24.2D Reputational Harm			Y	N	4	5	5	5	5	96	EH		3	3	3	3	3	60	M				



**THE OCCUPATIONAL HEALTH AND SAFETY
SPECIFICATION FOR THE JOHANNESBURG
DEVELOPMENT AGENCY (JDA)**

**SOCIAL DEVELOPMENT PROGRAMME
EIKENHOF FARM**

	JDA - OCCUPATIONAL HEALTH AND SAFETY (OHS) SPECIFICATION- SOCIAL DEVELOPMENT PROGRAMME	Contract No.	SOCDEV_OHSC/2020/21	
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OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

FOR

JOHANNESBURG DEVELOPMENT AGENCY (JDA)



SOCIAL DEVELOPMENT PROGRAMME
EIKENHOF FARM



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1. DEFINITIONS

“Building” Includes –

- a) Any structure attached to the soil;
- b) Any building of such structure or part thereof which is in the process of being erected; or
- c) Any prefabricated building or structure not attached to the soil;

“**Chief Executive Officer**”, In relation to a body corporate or an enterprise conducted by the State, means the person who is responsible for the overall management and control of the business of such body corporate or enterprise;

“**Competent Person**” means a person who is medically fit and possesses the necessary knowledge, training, experience and where legally required, the qualification required to perform a specific job. Task or role and or any person having the knowledge, training, experience and qualification specific to the work or task being performed. Provided that where appropriate qualification and training are registered in terms of the provision of the South African Qualification Authority Act, 1995 (Act No 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training.

“**Danger**” means anything which may cause injury or damage to persons or property;

“**Employer**”, means, subject to the provisions of subsection(2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him but excludes a labour broker as defined in section 1(1) of the Labour Relations Act, 1956 (Act No. 28 of 1956);

“**Hazard**” means a source of or exposure to danger;

“**Health and Safety Equipment**” means any article or part thereof which is manufactured, provided or installed in the interest of the health and safety of any person;

“**Incident**” means an incident as contemplated in section 24(1) and includes an environmental incident and a near miss.

“**Mandatory**” includes an agent, a contractor or a subcontractor for work, but without derogating from his status in his own right as an employer or a user;

“**Occupational Health Practitioner**” means an occupational medicine practitioner or a person who holds a qualification in occupational health recognised by the South African medical and dentist council as referred to in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No.56 of 1974), or the South African Nursing Council as referred to in the Nursing Act, 1987 (Act No.50 of 1978)

“**Risk**” means the probability that injury or damage will occur;

“**Safe**” means free from exposure to any hazard

“**Certificate of Competency**” or “**Certificate**” means a certificate of competency as a mechanical or an electrical engineer, as the case may be issued in terms of regulation 2(1)

“**Agent**” means any person for whom construction work is performed



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“**Construction Activities**” is any construction work as defined in construction Regulations and any training or meetings directly in relation to such construction work and exclude the transportation of employees to and from a worksite.

“**Contractor**” means and employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

“**Fall Preventative 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 settling out the procedure and methods to be applied in order to eliminate the risk

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

“**Health and Safety File**” means a file or other record in permanent form, containing the information required as contemplated in these regulations

“**Health and Safety Plan**” means a documented 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.



“**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.

“**Medical Certificate of Fitness**” 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.

“**Structure**” means any building, steel or reinforced concrete structure(not being a building) railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer 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; any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or any fixed plant in respect of work which includes the Installation, commissioning, decommissioning or dismantling where any such work involves a risk of a person falling two meters or more;

“**Workplace**” is the area defined as such in the NEC contract and includes the servitude and authorised access roads to and from the servitude by the shortest route, the site camp and material laydown areas but does not include any public road defines as such in terms of the Road Traffic Act.

“**Worksite**” is the area in the workplace where construction activities are underway.

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“On Duty” Is the time during which and after the Daily Safe Task Instruction is/has conducted and construction activities are being performed. It excludes to and from the workplace whether or not in a company, private, hired or subsidised vehicle. Where a vehicle has been provided solely for the purpose of transporting workers to and from the worksite, the driver only will be deemed to be on duty while driving in the workplace and on a public road.

“Visitor” is any person who is not permanently employed on the project and will not perform any construction work. It included persons who visit the project for a period of not more than 3 consecutive days including representatives from the client, facilitators from training organisations and specialist mechanics who assess or repair vehicles, plant or equipment. Employees from Head Office are not deemed to be visitors as they will spend time on the project at various intervals



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2. INTRODUCTION



2.1 Purpose

This Occupational Health and Safety Specification aim to:

- Outline the Health and Safety Requirements and approach that will be used during the Johannesburg Development Agency (JDA) –The design and implementation of deep excavations, concrete base, culverts and manholes to ensure that the construction works programme and compliance monitoring are aligned with the requirements of the Occupational Health and Safety Act 85 of 1993 and its latest regulations.
- Identify and comply with all project regulatory and related health, safety and environmental legal, client requirements in all project phases.
- Identify, assess and proposed mitigation measures for the risks pertaining to the project that can have a significant impact on the project quality, milestones, Safety, Health and Environmental contraventions.
- List the outcomes to be expected through the implementation of this specification and to ensure that they are implemented by all the project parties.
- Ensure that the monitoring, evaluation, reporting and review methods for this OHS specifications are implementable and appropriate as measuring tools to ensure effectiveness.
- Ensure that there are sound Health and Safety practices applied at all times and that Health and Safety remain the paramount of the construction works.

2.2 Occupational Health and Safety Specification Objectives

- That the Covid 19 construction-related regulations are complied with at all times.
- Zero Tolerance of Covid 19 or any other Hazardous Biological Agents incidents caused by the project activities.
- Zero tolerance to breaches of SHE requirements, including the Client Requirement, shall be applicable at all time.
- All hazards shall be identified, assessed and controlled through an extensive risk assessment process that is project-specific.
- Management and Supervisors shall lead by example to encourage involvement and ownership and all levels of management will accountable for managing safety and health issues
- Working safely to be the condition of employment and unsafe acts or behaviour shall be investigated and result in disciplinary action.
- Implementation of a Principal Contractor project-based training plan to ensure that employee involvement and consultation is essential.
- All incidents and near misses to be reported, investigated and communicated to prevent reoccurrences

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- Ensure that sub-contractors and suppliers to strive for Safety, health and Environmental best practices and to comply with the Principal Contractor's Health and Safety Plan.

2.3 Methodology and Safe Work Procedure expected outcomes

- To ensure that there are zero health, safety and environmental incidents that can be detrimental to the health and safety of employees, client and suppliers and contractors.
- An improvement in the management of the project throughout all the project phases from Site Establishment, Commissioning and Handover.
- A platform to attending to grievances, complaints and uncertainties in terms of Quality, Technical issues during all project phases.
- This OHS Specification can be measured, monitored, reviewed periodically to ensure continual improvement and also be reported for any changes or improvements to the client timeously.

3. LEGAL REFERENCES AND FRAMEWORK

3.1 National Legislation and Standards

- Constitution of Republic of South Africa 108 of 1996
- Occupational Health and Safety Act 85 of 1993
- National Disaster Management Act, 2002
- Environmental Management Act 107 of 1998
- Environmental Management: Air quality Act 39 of 2004
- Environmental Management Waste Act 59 of 2008
- Atmospheric Air pollution prevention Act 45 of 1965
- Hazardous Chemical Act 15 of 1973
- National Water Act 36 of 1998
- Water Services Act, 1997
- Compensation of Occupational Injuries and Disease Act, 1993

3.2 Regulations, Norms, Standards and Strategies

- National Building Regulations
- Disaster Management Act, 2002 Sectorial Guidelines
- OHS Measures in the Workplace – Covid 19
- Management of Human Remains Regulations, 2013
- Draft Sectorial Construction Regulations, 2020
- Construction Regulations, 2014
- Driven Machinery regulations, 1988
- Electrical Installation regulations



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- Electrical Machinery Regulations, 2011
- Environmental Regulations for Workplaces, 1987
- Facilities Regulations, 2004
- Hazardous Chemical Substance Regulations, 1995
- Hazardous Biological Agents, 2001
- Major Hazard Installations Regulations, 2001
- Noise Induced Hearing Loss Regulations, 2003
- Pressure Equipment Regulations, 2009

4. PROJECT SCOPE OF WORKS

- These specifications are applicable to the specific scope of work pertaining to the above-mentioned project as detailed in the tender documents, and is summarized below:

(i) OVERVIEW OF THE WORKS



General description of the scope of works

The works to be executed under this contract include the following but is not limited to:

- Three phase electrification
- Sceptic tank extension
- Construction of cold room and container slab

Other Activities

- Establishment of the contractor on-site;
- Construction Works

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5. ROLES AND RESPONSIBILITIES

5.1 Client

- The Client or his appointed Agent on his behalf will appoint the Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations and determined by the Bills of Quantities.
- The Client or his appointed Agent on his behalf shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan of both Principal Contractor and Sub-Contractors for approval.
- The Client or his appointed Agent on his behalf will take reasonable steps to ensure that the health and safety plan of both the Principal Contractor and Sub-Contractor is implemented and maintained. The steps taken will include periodic audits at intervals of at least once every month.
- The Client or his appointed Agent on his behalf, will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:
 - have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
 - have failed to implement or maintain their health and safety plan;
 - have executed construction work which is not in accordance with their health and safety plan; or
 - act in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

5.2 Principal Contractor

- The Principal Contractor shall accept the appointment under the terms and Conditions of the Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work, notify the Department of Labour of the intended construction work in terms of Regulation 4 of the Construction Regulations.
- The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with.
- The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.
- The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction



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Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.

- The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement of the works.
- The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a tenderer's offer is based.)
- The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.
- The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, an Inspector, Employee or Sub-contractor.
- The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on-site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.
- The Principal Contractor shall, throughout the execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor.
- The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.
- The Principal Contractor will comply with the legal requirements such as the Occupational Health and Safety Act 85 of 1993, and with all its regulations namely, construction regulations, environmental regulations, hazardous chemical regulations, OHS Covid 19 measures in workplace regulations driven machinery regulations and all the other applicable ones within the Act.
- The Principal Contractor will comply with the Compensation of occupational injuries and Disease Act (COIDA) of 1993 when carrying out work, for reporting and adherence to the Act.
- The Principal Contractor will also comply with all the local legislation such as the City of Johannesburg municipality by-laws pertaining to the health and safety of the people, and all the community safety. The bylaws will also be applicable during the waste management at the municipality landfill site.
- The Principal Contractor will comply with the National Road Traffic Act when using national or regional roads as well as the suppliers.



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- The Principal Contractor will comply with the Environmental Legislation in support of the environmental regulations of the OHS Act 85 of 1993 as required by the Environmental Regulations.
- The Principal Contractor will comply as far as reasonably practicable to the client and stakeholders requirements.

5.3 Client Representatives roles and Responsibilities Table

Position	Responsibility
Client Consulting Engineer	<ul style="list-style-type: none"> • To monitor the Principal Contractors construction works programme and ensure that the project is not delayed. • To provide guidance and direction on the project with regards to the construction and project management requirements. • Overall responsible on behalf of the client in ensuring that the OHS requirements on the project are met.
Client Designer	<ul style="list-style-type: none"> • To ensure that the applicable safety standards incorporated into the OHS regulations are complied with in the design. • Provide and demonstrate all relevant health and safety information about the design of the relevant structure. • In form the client 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. • Inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design.
Client OHS Consultant	<ul style="list-style-type: none"> • Assessment and analysis of potential risks attached to the project • Development of a project-specific health and Safety specification for the project • Evaluation and approval of the contractor's health and safety plan for the project • Site visits and regular monitoring audits • Attend monthly site meetings for the presentation of the monthly audit report • Conduct a final compliance audit on completion of the project and submit a closeout report • Ad-Hoc meetings as required by the client • Presentations to affected stakeholders of the project



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5.4 Principal Contractor Roles and Responsibilities

Position	Responsibility
Chief Executive Officer CR 16(1)	The CEO takes responsibility for ensuring that SHE management is managed effectively throughout the business. The CEO will ensure that adequate resources are provided to ensure implementation of the SHE Policy and will appoint persons accordingly.
Finance and procurement	<p>The Finance and procurement take responsibility for ensuring that records of SHE management expenditure are maintained and can be extracted for confirmation and review purposes.</p> <p>The Finance and procurement will ensure that all the required resources for the implementation of this plan are procured timeously and effectively.</p>
Human Resources Manager	The Human Resources department is responsible for ensuring that SHE responsibilities form part of employment contracts and that SHE disciplinary actions are implemented when required.
Project Manager CR16 (2) Section 8 Duties	<p>As appointed by the CEO will carry out duties of the CR16 (2) appointee by being responsible for all the SHE Relate matters on the project. This will include but not limited to Resource allocation; Incident Management; Construction Methodology to reduce risks; Inspections and overall support of the Project SHE related matters.</p> <ul style="list-style-type: none"> The Project Manager Section 16 (2) appointee, as appointed by the Chief Executive officer Section 16 (1) of Principal Contractor Principal Contractor will be responsible for the Safety and Health of all persons entering the offices, and construction site camps during the construction phase of this project. The Project Manager shall be assisted in all SHE requirements by the Construction Manager who shall be appointed as the Construction Supervisor C.R. 8(7). The Project Manager shall be responsible for the appointment of all persons on the project as is legally required. This includes the legal appointments of persons employed as Mandatory's. The Project Manager shall appoint a competent SHE Officer on-site to assist with the implementation of the SHE plan and all Johannesburg Development Agency requirements on the project. The SHE Officer will support entirely by the SHE Manager, who will ensure that all SHE requirements are met both at Head Office and on Site. The Project Manager and Construction Manager shall ensure that all work operations on site of the appointed, competent supervisor with the Assistant Construction Manager Appointment. 8(1)



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	<ul style="list-style-type: none"> The Project Manager and Construction Manager, with the assistance of the Principal Contractor Project Administration and Head Office Administration, that centralised personnel database shall be kept which will entail a record of the induction, training and competency of all staff as part of the on-site SHE filing system. Construction Managers and Supervisors (Assistant Construction Manager) must ensure that they give clear instructions for the work to be performed to all personnel allocated to carrying out that work
Construction Manager 8 (1) Section 8 Duties	<p>Will make themselves familiar with, and shall work in compliance with the SHE Method Statements; SHE Plan; SHE Specifications and all the other SHE project related documentation for their tasks and its arrangements as they affect their activity;</p> <ul style="list-style-type: none"> Will follow all SHE instructions issued by management and supervising staff relating to their work activity and emergency procedures; Will Report any SHE incident arising out of or in connection with their work activity to their SHE Officer; Client and SHE Manager Will refrain from any conduct that may impact negatively on the employees Will ensure that the employees and equipment under their control are environmentally compliant at all times.
Temporary Designer	<ul style="list-style-type: none"> To ensure that all temporary works are adequately designed so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied. To ensure that the designs of temporary works are done with close reference to the structural design drawings. To ensure that all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector.
SHE Manager (SACPCMP registration compulsory) All OHS Act Sections	<p>Identify any SHE hazards associated with the project; Ensure appropriate Risk Assessments for projects are carried out to develop the Risk Management Plan.</p> <ul style="list-style-type: none"> ➤ Ensure implementation of SHE requirements; ➤ Ensure all staff on projects are aware of SHE requirements ➤ Ensure that any incident is recorded and investigated where appropriate in accordance with the Accident Reporting Procedures. Ensure that Monthly SHE meetings are held and effective Support all site SHE Based staff through training and capacity building. Carry out Audits and Adhoc site inspections to track compliance.



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<p>SHE Officer CR 8(5) (SACPCMP registration compulsory)</p>	<p>The SHE Officer is required to actively advise and assist the Construction Manager and Construction Supervisor to ensure the following:-</p> <ul style="list-style-type: none"> • Compliance with all S HE Legislation • Compliance with the company's SHE Management System • Implementation of the contract-specific SHE Management Plan • Early identification and reporting of significant site-specific SHE risks • Management of the interactions with landowners • Reporting, Investigation incidents, accidents and near misses. • Safety, Health and Environmental control of site activities • Good and timeous liaison with the client with regard to environmental matters. • SHE officer must be competent to do work and must provide relevant proof of registration (SACPCMP). • The SHE officer will be responsible to advise the Project Manager and Construction Manager on all Safety, Health and Environmental related issues. • The SHE Officer will be responsible for compiling and filling in an incident Logbook whenever an accident, incident or near-miss occurs on-site, and for informing the SHE Manager and SHE Head Office incident number shall be referenced in the Incident Log Book on the project. • The SHE Officer shall carry out weekly inspections on all Principal Contractor Construction Teams, all appointed Mandatory and conduct internal audits at least monthly and all audit reports shall be submitted to the Construction Manager, Project Manager and the SHE Manager within 7 days of such audit. The SHE officer will make the inspections available on site for the Johannesburg Development Agency Safety and environmental Representatives for audit purposes. • The SHE officer will communicate any deviations to the SHE Plan to the relevant team supervisor and will follow up to ensure that the matter is dealt with. <p>The SHE Officer is also required to identify and report any deviations from the legislation, SHE Management System and the contract-specific SHE Management Plan through regular auditing and the generation of non-conformance reports (NCRs) and Corrective action reports (CARs) SHE officer is required to be active in assisting the site management to close out NCRs and CARs.</p>
<p>SHE Reps Section 17 Duties Section 13 Duties</p>	<ul style="list-style-type: none"> • Will make themselves familiar with, and shall work in compliance with the SHE work instructions for their tasks and its arrangements as they affect their activity; • Will Report any SHE incident arising out of or in connection with their work activity to their Supervisor. • Will refrain from any conduct that may impact negatively on the employees



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<p>General Employees Section 14 Duties Section 13 Duties</p>	<ul style="list-style-type: none"> • Will make themselves familiar with, and shall work in compliance with the SHE work instructions for their tasks and its arrangements as they affect their activity; • Will report any potentially Safety, health and environmental defect in premises, plant or equipment to their Supervisors, Construction Manager or Contract Manager; • Will Report any Safety, health and environmental incident arising out of or in connection with their work activity to their Supervisor • Will refrain from any conduct that may impact negatively on the employees
<p>Project Employees</p>	<p>Employees will be responsible for their health and safety and that of their co-workers in their area. Employees will be made aware of their responsibilities during site induction, weekly toolbox talks and daily safe task instruction. These responsibilities include the following:</p> <ul style="list-style-type: none"> • Familiarising themselves with workplace, work tasks and health a procedures • Working in a safe manner to ensure that they do not endanger them others • Keeping the work areas tidy by observing housekeeping practices • Reporting all incidents/accidents and near misses immediately • Protecting fellow workers from injury • Reporting unsafe acts and unsafe conditions • Reporting any situation that may become hazardous • Carrying out lawful instruction and obeying the health and safety rules • Adhering to the Principal Contractor Requirements, the Principal Contractor Principal Contractor Health and Safety Policy and the client specification <p>All employees will be inducted before being permitted to work on site. This shall include a company Induction, project Induction facilitated by Johannesburg Development Agency after which a project-specific induction facilitated by the Principal Contractor.</p> <p>No employee shall be permitted to undergo a project induction unless they are in possession of a copy of their medical certificate of fitness and proof of having attended the Johannesburg Development Agency Induction both of which shall be handed to the inductor for filing purposes.</p> <p>Employees will not be permitted to work under the influence of alcohol or drug</p> <p>Any violation of the SHE Plan will result in disciplinary from the project and disciplinary action will be instituted which could result in dismissal. Disciplinary action will be implemented for any violations of health and safety rules and employees will be re-inducted or retrained.</p>



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Plant Operators

- The Construction Manager and Safety Officer, jointly, will ensure that only competent and qualified employees operate any vehicles, plant or equipment. Such drivers and operators must be in possession of written authorization to drive or operate the specific category of plant, machinery or vehicle which shall be kept in their respective files in their vehicles.
- All drivers or operators shall be responsible to complete a Daily Vehicle Check Sheet and shall hand these to their respective supervisors who shall peruse each check sheet and if satisfied that no faults have been reported shall return it to that driver operator who shall keep it in his possession for the duration of the shift. If any fault is reported, the supervisor shall bring this to the attention of the appointed inspector who shall decide whether the vehicle may be permitted to continue working and shall so endorse the check sheet.
- Should he deem the vehicle unsafe to use he shall bring this to the attention of the Construction Supervisor. Completed check sheets shall on a weekly basis be handed to the Safety Officer for filing.



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6. HEALTH AND SAFETY MANAGEMENT DOCUMENTATION

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a Health & Safety File on-site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done. A more detailed list of documents and other legal requirements that must be kept in the Health and Safety File is attached as an addendum to this document.

Legal Documents	Project OHS Plans	Monitoring Documents
<ul style="list-style-type: none"> Client's approval of the SHE Plan General Liability Insurance (Summary of Policy) and/or COIDA Letter of Good Standing Department of Labour Notification Section 37 (2) Agreement Appointment letters Site Access Certificate 	<ul style="list-style-type: none"> Health and Safety Plan Fire Prevention Plan Fall Protection Plan Emergency Preparedness Plan Incident and Accident Management Procedure Method Statements (Safe Work Procedures) Risk Assessments Covid 19 Policy and OHS Plan. Covid 19 Risk Assessment 	<ul style="list-style-type: none"> Records of all reported Incidents, accidents and near misses Daily Safety Task Instructions Site Induction Records/Attendance Registers SHE Committee members Audit Reports Job Observation records Visible Felt Leadership records PPE Issue and Inspection Records Training Matrix Equipment Inspection Checklists Monthly SHE Meeting Minutes Medical fitness certificates Hazardous substance registers and Material Safety Data Sheets Permits Mandatory Records i.e. assessments, audits, appointments, safety files Performance statistics Lifting equipment certificates Client Specifications SHE Correspondence Emergency Plan and Contact Numbers PPE and Clothing Register Permits (Hot Work, Confined Space, Excavation, Hi-Voltage, etc.) Inspection and Audit Reports (internal and external) Incident Register and Investigation Reports MSDS's Calibration Certificates SHE Statistics and Reporting Copy of Occupational Health and Safety Act & Regulations Proof of site handover (meeting minutes) Health and Safety Training Records Proof of competency records Equipment Registers

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7. CONSTRUCTION ACTIVITIES AND WORKS

7.1 Site Establishment



7.1.1 Site Identification

- **Size and zoning:** The size of the land has to accommodate the requirements of the project's activities. Relevant municipal offices will be consulted to ensure that the contractor can be made aware of the relevant local legislation, standards and available restrictions on land usage so that a site may not be established on protected areas.
- **Legal:** A lease agreement shall be obtained from the landowner to show that there is approval to use the land. Permits to connect for services such as water and electricity should be obtained from the relevant municipal offices, as a site requires electricity and water to be functional.
- **Site Security:** A Site Security Management Plan appropriate to the site security risks and to coordinate and achieve adequate site security, to ensure that during the dismantling of the outside concrete palisade, the property is not left accessible by the public and must be implemented on the project throughout. A Full-time Security shall be appointed to control access and exit on-site at all times. All vehicles shall be searched before entering and exiting the site at all times. A register shall be kept at the entry point to register the names of those who will be entering the site.

AT NO TIME SHALL THE PROPERTY BE LEFT UNGUARDED OR UNSECURE.

7.1.2 Site Layout

- A good site layout is important to ensure the safety of the working environment and effective and efficient operations.
- Construction site layout planning involves identifying, sizing, and positioning temporary and permanent facilities within the boundary of the construction site.
- The plan must take into consideration Safety, Health and Environmental Management information such as fire precautions, emergency preparedness, first aid areas, welfare facilities, Waste Management with relevant signage. Existing services on the land must be displayed on the site layout plan.

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7.1.3 Access and Traffic Management



- Where activities are performed close to public routes, the Principal Contractor will establish a traffic management plan including the requirements of relevant municipal by-laws.
- The contractor should ensure that proper access control is in place and functional at all times on and off the construction site.
- The contractor should capture images of an access road before and after the construction of the site camp.
- At a minimum, there should be a provision of barricading, warning signage and flagmen to ensure the protection of workers from moving vehicles.
- Where required, the Principal Contractor will interact with the local traffic department to establish minimum requirements to be implemented on public routes.
- The contractor shall obey the site traffic plan to ensure the safe movement of all construction mobile plants on site.
- The traffic management plan will be reviewed at the monthly safety meeting to ensure its applicability. Proper road signage must be displayed during the construction phase of the project. All security requirements have to be highlighted at the induction given by the contractor.

7.1.4 Demarcation and Fencing

- Demarcation of the selected site has to be done to ensure that there is no interference with the neighbouring properties.
- Where hazards exist, entry must be specifically restricted for safety and health reasons.
- A security fence will be erected around the construction site to demarcate the boundaries, as well as to restrict access from the site to surrounding areas where trampling may occur on the indigenous vegetation. Internal demarcation will be erected to outline particular designated and screened areas.
- A fire break will be maintained on either side of the fence to limit the spread of fire from neighbouring properties; this shall be maintained regularly.
- Where there is indigenous vegetation, the clearing of the firebreak should be supervised by the SHE Officer more often.

7.1.5 Signage and Notices

- At the entrance of the site camp, a sign with the Johannesburg Development Agency and Principal Contractor, OHS Consultants and emergency details will be erected and shall include the project name and number, the name and contact numbers of the Project Manager, Site Manager, SHE Officer.

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- Having established the site camp, the Construction Manager and SHE Officer shall together assess the needs for and the location of all fire and first aid treatment facilities. Signage shall be prominently displayed indicating the location of each of these.
- The SMI board will be erected that will display Principal Contractor and Johannesburg Development Agency logo, Lost Time Injuries Frequency Rate (LTIFR); Man Hours and Incidents, accidents statistics.
- Safety, Health and Environmental Signage (Visible and Interpretable) (SANS 1186) will be posted on the construction site to ensure that employees are well made aware of the workplace surroundings. The signage will include but not limited to drinking water sign on water points, Fire extinguisher signs indicating the location of fire extinguisher; Assembly point signage and demarcation for emergencies; First Aid Kit signage to alert employees of the First Aiders location; Construction Area signage demarcating the active construction works; Barricading caution signage and excavation signage indicating the open excavations.
- More signage will be installed in addition to the above mentioned to ensure that persons working well made aware. Persons will be trained to ensure that they can interpret the signs.
- Barricading will be applicable on the excavations and other no go areas demarcation to ensure that persons are prevented through visibility of excavation hazards and risks. These will also be incorporated into the method statements, risk assessment and standard operating procedures.



7.1.6 Barricading

- All barricading shall at all times comply with the requirements of CR13 (3)(l). All excavations and openings where there exists any risk of a fall, shall at all times be properly barricaded using a solid type of barricade or fencing, able to withstand a horizontal pressure of 100 kilograms. Signs with the responsible person's contact number will be placed on at least one of the barricades at each location.
- When an excavation or unsafe deep places is to be left for a period exceeding 2 days, the supervisor shall inspect all barricading daily and ensure that all is and remains safe and serviceable and he shall keep a record of such daily inspections. Where barricading is to be used to prevent accidental entry into a "High Voltage Area" use may be made of orange / red shark netting.

Under no circumstances may danger tape be used in lieu of barricading.

7.1.7 Workplace Facilities.

- The contractor shall ensure that where reasonably practicable provide ergonomically sound seats for every site management offices for employees whose work can be effectively performed while seating.
- All entrances of the ablution facilities must be constructed in a way that will accommodate privacy to users and keys shall be kept inside, to enable the user to lock while inside.

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- Ablutions shall be properly marked for gender identification, separate male and female changing facilities and sheltered eating areas. Furthermore, these facilities must be kept clean and free from odours at all times.
- Sanitary conveniences must be provided and maintained at a rate of at least one shower facility for every 30 workers and at least one ablution facility for every 20 workers.
- Where chemical toilets are provided, one toilet for every twenty-five employees must be allocated. All ablutions must be properly cleaned on the daily basis, disinfected and provided with toilet paper.
- All employees making use of these facilities have the responsibility to adhere to all etiquette hygienic practice.
- Provision of washing facilities, including soap and towels, must be made available for use by the contractor's employees.
- Drinking water must be provided on-site.
- Drainage from all facilities must be properly designed and constructed to prevent employee exposure to wastewater and the associated biological hazards.
- Wastewater may not accumulate or stand in pools at any location on the project site.
- No chemicals or equipment's, except those normally used for domestic cleaning of these facilities, may be stored in the facilities.
- The Eating Area will be established for the employees to use as required by the facilities regulations. The food will be kept within reasonable temperatures and the water will be kept cool for consumption purposes. Only designated eating areas will be used for eating purposes and the employees will have access to waste disposal facilities but within a reasonable distance that will not be affected by the waste receptacles.

7.1.8 Stacking And Storage

The stacking and storage of materials will be in accordance with the Occupational Health and Safety Act 85 of 1993, stacking and storage regulation. The storage and staking method will ensure that the risk of falling and collapsing objects is prevented. The stacking of material must be on a stable level surface in order to ensure that the stability of the materials is secured.

7.1.9 Hazardous Substances

A contractor must designate a hazardous and chemicals storage area. The designated area must be constructed with a concrete foundation and must be surrounded by a bund wall and must have 110% of the volume of the substances stored. The concrete foundation must deep gentle in one direction where a drainage system with a stop cork installed. Access to the hazardous and chemical storage area must be controlled. Where required the Health and Safety Plan shall include a method statement detailing the safe use, storage, decanting and spill controls for all flammable liquids used and stored on site.



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7.2 Excavations Works

A contractor must ensure that excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose.

- A contractor must ensure a relevant risk assessment and method statement are developed and applied.
- A contractor shall evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins, as per Construction Regulation 13(1)
- All barricading shall at all times comply with the requirements of Construction Regulation 13 (2)(l).
- No person may enter an excavation unless a Permit to Work has been issued providing authorisation for specific tasks to be carried out within the excavation.
- Excavations must be backfilled as soon as possible, and the material used (usually the original material) must be properly compacted. An excavated area must be restored to its original condition if at all possible.
- If a hazardous condition is identified while work is being carried out in an excavation, then all persons in the excavation must be evacuated to safety without delay, as per Construction Regulation 13 (2)(g).
- Every excavation, including all bracing and shoring, shall be inspected daily, before the commencement of each shift and that no person enters the excavation or works in a risk zone until the excavation is assessed and declared safe, as per Construction Regulations 13 (2)(h)
- All excavations must be left open for the minimum of time required and those that are left open on the site must be protected by a barrier or a fence of at least one meter in height as close to the excavation as is practicable, as per Construction Regulations 13 (2)(i).
- The protective barrier or fence/ barricade must adequately prevent persons from falling into the excavation and barrier taping is not sufficient for this purpose, as per Construction Regulation 13 (2)(i).
- Excavation shoring and bracing, if required shall be designed by a designer appointed in writing who shall inspect and approve the installed shoring and bracing. Where persons work, inspect or test excavations, warning signs must be in place next to an excavation.
- No danger tapes are allowed for barricading purposes and barricading must be placed as close as possible to the excavation.
- The risk assessment must consider the hazards and risks associated with a person being trapped in an excavation as a result of laying stormwater pipes.
- A safe work procedure for laying stormwater pipes must be in place.
- A detailed stormwater management plan must be developed.
- Whenever persons are required to work in confined spaces the contractor must take into consideration the provisions of General Safety Regulations 5.

The provisions of Regulation 13 of the Construction Regulations shall be followed in every detail.

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7.3 Structures.



A contractor must designate a competent person who will control and supervise all work on the erection of structures.

- A contractor must ensure a relevant risk assessment and method statement are developed and applied.
- A contractor must ensure that 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.
- No structure or part of a structure must be loaded in a manner which would render it unsafe; and all drawings on the design of the relevant structure must be kept on-site and made available on request to an inspector, other contractors, the client and the client's agent or employee.
- The structure must be maintained in a manner that it remains safe for continued use; The records of inspections and maintenance shall be kept and made available on request to an inspector.
- No person shall perform the trade of plumbing as contemplated in Government Notice No. R. 1875 of 31 August 1979 unless he is a trained plumber or works under the adequate control of a trained plumber or approved competent person.
- A contractor must ensure that all temporary works structures are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the structure that the structure is not designed to withstand.
- All temporary works structures are inspected by a competent person immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least daily until the temporary works structure has been removed and the results have been recorded in a register and made available on site.

7.4 Layer Works.

A contractor must designate a competent person who will control and supervise all layer works.

- The contractor must ensure a relevant risk assessment and method statement are developed and applied.
- A contractor must ensure that the operation of a bulk mixing plant is supervised by a competent person who has been appointed in writing and is aware of all the dangers involved in the operation thereof; and conversant with the precautionary measures to be taken in the interest of health and safety, as per Construction Regulation 20.
- The contractor must ensure that all batch plant operations are carried out in a specific designated area.
- Mixing, transporting, and handling of concrete shall be properly coordinated with placing and finishing works.

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- The Contractor must ensure that precautionary measures are put in place to prevent and control the spillages of concrete and asphalt into the soil and water resources.
- The contractor must ensure that all employees involved in concrete mixing and asphalt overlay are provided with proper PPE.
- The contractor must ensure that all safe work procedures for the laying of pavement and kerbs are adhered to.



The provisions of Regulation 20 of the Construction Regulations shall be followed in every detail.

7.5 Electrical Works.

The contractor must ensure that all electrical installations on the construction site are designated to a competent person who has been appointed in writing for that purpose. Method statements for all the activities should be in place.

- A contractor shall appoint a competent electrician in writing who shall control all electrical installations.
- All temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site.
- All electrical machinery is inspected by the authorized operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.
- A contractor must ensure a relevant risk assessment and method statement are developed and applied.
- Electrical installation worked on by a contractor must be inspected by a competent person to ensure that the installation complies with all legal requirements, codes, design criteria and safety standards applicable to the project.
- Work on new electrical installations and modifications or repairs to existing installations may only be carried out by competent personnel. Electrical safety devices specifically, earth leakage protection and overcurrent protection must be installed on all distribution circuits and the settings must be established by suitably qualified personnel.

The provisions of Regulation 24 of the Construction Regulations shall be followed in every detail.

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8. Construction Works Management

8.1 Plant and Equipment Inspections

- The appointed Plant and Equipment Inspector and Safety officer, jointly, will ensure that all plant used is equipped with the necessary guards for protection. All guarding will be examined monthly by the appointed Plant and Equipment Inspector and a check sheet completed by them.
- The Safety Officer will ensure that all equipment in use has been inspected/checked/tested regularly by the Supplier / Appointed Inspector to ensure compliance to OHS Act 85 and relevant Regulations.
- A competent inspector of Construction Vehicles and Mobile Plant shall be appointed by the Project Manager unless if supplied or outsources whereby the service record, inspection records and maintenance records will be inspected by the SHE Manager/ SHE Officer.

8.2 Noise Management



- No amplified music will be allowed on the site. The use of radios, tape recorders, compact disc players, television sets etc. will not be permitted unless at a level that does not serve as an intrusion to the surrounding community.
- The Contractor will take preventative measures (e.g. screening, muffling, pre-notification of affected parties) to minimise complaints regarding noise and vibration nuisances from sources such as power tools.
- The speed limit should be 40km/h on all roads running through and accessing the project area.
- Machinery should be serviced periodically.

8.3 Dust Management

- Dust must be suppressed on access roads, office camp, and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that must not result in the generation of run-off.
- Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.

8.4 Waste Management

- Application to dispose of waste shall be made to ensure that there is approval to dispose of waste.
- The contractor must ensure that all waste that is generated on-site is handled, stored, transported and disposed of under the requirements of the applicable legislation.
- No waste may be removed from the project site to waste storage or disposal facility unless that facility has been approved for use by the nominated project management representative.
- Designated waste bins and skips must be provided by the contractor and suitable arrangements must be made to ensure that these bins and skis are emptied regularly.
- Hazardous wastes must be kept separate from general wastes.

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- Waste disposal service providers must be approved by the nominated project management representative before any waste is removed from the site.

8.5 Stacking And Storage

- The stacking and storage of materials will be in accordance with the Occupational Health and Safety Act 85 of 1993, stacking and storage regulation. The storage and staking method will ensure that the risk of falling and collapsing objects is prevented. The stacking of material must be on a stable level surface in order to ensure that the stability of the materials is secured.
- Failure to properly stack and store can cause spillages which has an effect on the environmental protection, the health and safety of the persons leading to inhalation and physical injuries; property damage; material loss and production loss.
- The stacking of objects must be horizontally supported in proportion with the vertical height to reduce the falling of objects. Effective Stacking and Storage will ensure that there are no obstructions to the access to fire equipment; electrical connections; doorways; walkways; first aid access; work areas and construction areas.
- Hazardous Chemical storage must be in line with the hazardous regulation of the OHS Act 85 of 1993; project-related Environmental Management Plan and the Environmental method Statements. The hazardous chemical substance must have a Material Safety Data Sheet at the point of storage and use at all times.
- The storage and stacking of hazardous chemical substances must in such a way that should spillages occur, the preventative measure can be feasible before affecting the environment at the workplace. A staking and Storage Appointment will also be in place for the person responsible for ensuring compliance.

8.6 Hazardous Substances

- If any Hazardous Substance is to be used, stored, transported or manufactured, arrangements must be made for the safe use, storage and transport thereof. Materials Safety Data Sheets shall be kept in the store and in each supervisor's file where any possibility exists that any person may be exposed to such substances. PPE must be used in every instance where such a substance is used.
- First Aiders are to be specifically trained in the Treatment of any person who is exposed in any way and additional facilities are to be made available for such treatment. These include, but were not limited to eyewash facilities, etc. The client representative must be advised in writing by the Principal Contractor Project Manager prior to any Hazardous Substance being brought onto the site.
- All containers shall be properly marked with the contents fully described. If decanted into another container for use, no more shall be decanted than what can reasonably be expected to be used during any single operation. A register shall be kept of all Hazardous Substances on site.

UNDER NO CIRCUMSTANCES MAY COOL DRINK OR SIMILAR BOTTLES OR CONTAINERS BE USED.



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8.7 Housekeeping

- The Construction Manager is responsible to ensure that a competent person has been appointed to supervise all stacking and storage operations. To ensure that SHE remains paramount, shall ensure that areas are of sufficient size and demarcated according to the approved Environmental Management Plan for the site and camp/yard areas. All demarcations shall be strictly adhered to at all times.
- The principle to be applied is that there is a place for everything and everything has its own place and the correct placement of things will ensure proper housekeeping.

8.8 Scaffolding

- A contractor must appoint a competent person in writing who must ensure that all scaffolding work operations are carried out under his or her supervision and that all scaffold erectors, team leaders and inspectors are competent to carry out their work, as per Construction Regulation 16.
- A contractor using access scaffolding must ensure that such scaffolding, when in use, complies with the safety standards incorporated in the Construction Regulation 16.
- All Scaffolds must comply with SANS 10085, as per Construction Regulation 16.
- Scaffolding must be inspected and supervised daily and after inclement weather or any other imposed load by a competent appointed scaffold inspector.
- A contractor must ensure that all scaffolds are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the scaffold that the scaffold is not designed to withstand.

8.9 Smoking.

- The contractor must designate a smoking area on-site; however, the selected area must comply with the applicable legislation. Such an area must be demarcated and the required signage must be displayed
- The contractor must not permit smoking on-site except within designated smoking areas.
- Any person found smoking or discarding a cigarette butt outside of a designated smoking area may be removed (temporarily or permanently) from the site. In all designated smoking areas, adequate non-combustible commercial ashtrays and/or cigarette butt receptacles (butt cans) must be provided.
- Ashtrays and other containers provided for the disposal of smoking materials must not be emptied into rubbish bins or any other container holding flammable materials. "No Smoking" signs must be strictly observed.



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8.10 Hand Tools, Explosive Tools and Portable Electrical Equipment

- Hand tools, explosive tools and portable electrical equipment will be logged on a register. This equipment shall be registered and inspected daily by a supervisor and persons using the tools. The SHE Officer will inspect these daily and a qualified person will conduct inspections on a weekly basis. No person shall operate any explosive powered tool or any portable electric tool unless trained in the correct safe use and handling thereof.
- All plants, vehicles, machinery and equipment which has the potential to cause electric shock from contact or injury from nip points or moving parts, shall be properly guarded against exposure. Should the guarding be located within a safe working distance of the potential contact point, it shall be of a solid type to prevent potential exposure of fingers to contact or injury. No item of plant, vehicle, machinery or equipment which is required to be guarded may be used if the guards are missing or defective in any way.

9. CONSTRUCTION WORK DOCUMENTATION

9.1 List of Appointments and References

- Copies of all appointments legally required by the Act are to be filed In the SHE file and copies relevant to each team are to be placed in the relevant supervisors working file. A checklist of appointments anticipated on the project.
- Only persons deemed to be competent may be appointed. The responsibility of ensuring competence is with the Project Manager who shall be the only person entitled to sign any appointments other than his own appointment In terms of Section 16(2) which shall be signed by the Principal Contractor CEO. The list below is the basic appointment list and the additional appointments must be in place as required by the Act for activities depending on the project activities.
 - Construction Regulation Section 16(1) Declaration of the CEO/ Board Appointment
 - Construction Regulation Section 16 (2) Project Manager
 - Construction Regulation CR 8 (1) Construction Manager
 - Construction Regulation CR 8 (7) Construction Supervisor
 - Construction Regulation CR 8 (8) Assistant Construction Supervisor
 - Construction Regulation CR 8(5) SHE Officer
 - Construction Regulation CR 9 (1) Risk Assessor
 - Construction Regulation CR 10 (1) Fall Protection Officer
 - Construction Regulation 23 (1)i) Construction Vehicle and Mobile Plant Inspector
 - General Safety Regulation 26(a) Stacking and Storage Supervisor
 - Construction Regulation 29 (h) Fire Fighting Equipment Inspector
 - General Machinery Regulation 5(1) Portable Electrical Tool Inspector
 - General Administration regulation 9(2)- Incident Investigator
 - General Safety Regulation 3(4)- First Aider
 - General Safety Regulation 13(A) Ladder Inspector
 - Construction Regulation 17 (1) GAR 7 Safety, Health and Environmental Rep
 - Construction Regulation CR 13(1)(a)- Excavation Work Supervisor
 - Construction Regulation CR 24(a)- Temporary Electrical Install Controller

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9.2 Risk Assessments

- At the commencement of the project, a team of qualified risk assessors which involves a SHE representative, Construction Manager; Project Manager; Finance and Procurement representative; SHE officer will conduct a project-specific risk assessment for each activity and will assess and propose management plans.
- The Principal Contractor will take control measures to assist the SHE Officer by advising of possible dangerous conditions and working methods that they have identified within the workplace. All dangerous conditions identified must be reported to the SHE Manager and Construction Manager Immediately and corrective steps taken.

9.2.1 High-Risk Activities

- The Construction Manager and SHE Officer jointly will ensure that only competent and qualified employees work at heights and that they have each undergone a medical examination by an Occupational Health Practitioner within the previous 12 months certifying them physically & psychologically fit to work at heights.
- The SHE officer and Construction Manager will jointly ensure that the team Supervisor conducts Daily Safe Task instructions pertinent to the tasks to be performed that day and Risk Assessments, that they are recorded.
- The Supervisors must personally discuss the tasks for the day and point out any dangers and limits for those tasks as is contained in the Daily Safe Task Instruction. This responsibility may not be passed on to another person, However, it is recommended that team members rotate and that each participate in Identifying the risks prevalent and advise the learn of SWP's. This is to facilitate involvement and must still be done in the presence of and under the direction of the appointed supervisor. Both the Weekly Toolbox Talk and the DSTI are to be signed by every employee prior to work commencing.
- The appointed supervisor or foreman, who is appointed into CR8 (8) shall remain present at all times while any form of work is being undertaken.
- Such supervisor shall ensure that use is made of all safety devices and any other equipment which has been identified or which may be required in the interests of Safety & Health. These would include not be limited to; PPE, Barricading, Warning Signs, etc.
- A Fall Protection Plan will be compiled separately to this Written SHE Plan by a competent person in line with fall protection Plan Development requirements as per Construction Regulation 10. The Construction Supervisor and all relevant Assistant Construction Supervisors will be issued with the latest revision of the Written SHE Plan and the Fall Protection Plan.

9.2.2 Task Risk Assessment

- At every location where a task or job is to be performed, the Supervisor shall ensure that the Base Line Risk Assessment and Method Statements which are in his possession are valid and that no additional hazards or risks are present.



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- The Supervisor shall endorse the DSTI to that effect and shall include a reference to the various risk assessments in the DSTI's which are to be signed by every employee on site prior to the commencement of any work.
- Where a hazard develops during a work process, which has not been previously identified or addressed, and this is recognized by the supervisor or another person and reported to the supervisor, the supervisor shall make an assessment of the hazard and if deemed by him to be of low risk, the supervisor may allow work to continue, otherwise, the supervisor shall immediately cause all work related to that hazard to be stopped and arrange a formal Risk Assessment be carried out by a team and shall then revise or develop his Safe Work Procedure based upon the outcome of the risk assessment process, always considering SAFETY FIRST.

9.2.3 List of risk assessment identified for this project are but not limited to the following:

- Risk Assessment: Site Establishment
- Risk Assessment: Alterations
- Risk Assessment: Earthworks
- Risk Assessment: Concrete.
- Risk Assessment: Drainage
- Risk Assessment: Structures
- Risk Assessment: External Works
- Risk Assessment: Working at Heights

9.3 Method Statements And Safe Work Procedures

- All Method Statements will be submitted to the Client for approval. Based on the risk assessments, the Construction Manager, SHE Manager and SHE Officer and relevant Supervisor shall develop a method statement for each task. No project activity will commence without the approval of a project-specific method statement and the risk assessment.
- Any deviation from the approved method statement and risk assessment on carrying out work will result into revoking the approval and the Principal Contractor will have to stop all activities and review the method statement and risk assessment for re-approval.
- Combined there shall be the method in which the task is performed safely and may not be deviated from unless during the performance of the task it becomes apparent that the procedure is unsafe. After completion of each task, the Supervisor shall review the validity of each Method Statement and the procedures followed.
- Where the Construction supervisor or Construction Manager or other team members feel that the methods used could be improved upon in a view to reducing risk, The Construction Manager shall advise the SHE Officer and jointly they will revise the relevant Method Statement and submit it to the Johannesburg Development Agency OHS Consultant and representative for ensuring that the methods are aligned with project objectives, legal and Johannesburg Development Agency requirements. Such revisions shall immediately be included in the SHE file and copies handed to each supervisor who would at that stage have an older version in his working file.

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ANY AMENDED RISK ASSESSMENT OR METHOD STATEMENT, ONCE ACCEPTED AND IMPLEMENTED ON SITE AND REPLACE THE PREVIOUS VERSIO

10. WORKPLACE SAFETY MANAGEMENT

10.1 Personal Protection Equipment (PPE)

- The Construction Manager and SHE Officer with the assistance of the Principal Contractor SHE Manager shall undertake a risk assessment at the project start-up to identify the PPE that will be required for each task to be performed during the project.
- The Project Manager and Site Manager are to ensure that the required PPE is available for distribution to the employees.
- Supervisors are responsible for ensuring that the persons under their authority are wearing the Personal Protective Equipment necessary for the tasks they are performing. This shall include a minimum of two-piece overalls for all workers excluding supervisors. Specific PPE shall be used as is identified as a final control measure in Risk Assessments.
- Employees are responsible to ensure that they wear, inspect and maintain the PPE in good order and report damaged PPE to the supervisor immediately.
- Managers, Supervisors and Foremen will wear high visibility vests and white hard hats.
- Dedicated First Aider, SHE Officer will wear green hard hats with appropriate stickers attached on both sides indicating their status.
- Visitors will be provided with a high visibility vest and wear a hard hat with a "VISITOR" sticker attached on both sides.
- Every person on-site or at a workplace shall wear appropriate foot protection.
- Hearing protection shall be worn by every person who enters into a demarcated noise zone.
- Eye protection shall be worn by all persons on site. They shall be of a type with shatterproof lenses and side shields. Anyone who wears prescription spectacles shall ensure that they comply with this requirement or they shall wear appropriate goggles over such prescription spectacles.
- Any person working Inside an excavation shall wear clear safety glasses and all others may wear tinted safety glasses.
- Any workers handling any material shall wear gloves. Where it is cumbersome and not dangerous, work may be undertaken without the use of gloves. Examples of these are mechanics and persons assembling nuts and bolts where dexterity is important.
- All vehicles used to transport persons shall be suitable and will comply with the requirements as stipulated in Construction Regulation 21 and the specification. A seat and seatbelt shall be provided to, and shall be used by, every person at all times being transported whether on-site or off-site.
- It is the responsibility of all drivers is to ensure that employees are seated with seat belts fastened and safe while in transit. To ensure compliance drivers are required to personally check that seatbelts have been fastened and not rely on a passenger advising them that it is safe to commence driving. There should be no personnel on the rear of the LDVs or trucks whenever heavy materials are transported. Drivers are to be disciplined for failing to comply.
- Every person working on or visiting the worksite shall wear safety shoes or boots.
- Safety shoes/boots remain necessary, however other PPE is not necessary for designated and signposted 'GREEN AREAS'. This shall normally only be the site administration area and is applicable to administration staff.
- Supervisors shall inspect all PPE of every employee in their teams at least monthly and record the findings as required on the inspection record sheets. Where it is found that PPE is unsafe or worn and requires replacement, an application must be completed.



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- The induction is to be carried at all times and must be produced at the request of any employee at any time while on the site. Visitors will at all times be accompanied by a competent person. Any client representative or other employees not permanently and solely employed on the project shall be deemed to be a visitor. Clients representatives permanently employed on the project need not be accompanied.
- No visitor may perform any construction work. Persons from training institutions who are at the project solely to provide training shall only be required to attend the visitor's induction.
- Specialists who visit the site including for example Mechanics or Technicians who are there only to assess or repair specific equipment shall only be required to attend the visitors' induction prior to being allowed to commence any work.
- No employee will be allowed to work without the adequate and relevant PPE
- Employees will be given N95 masks to be worn and face shields
- Re-usable PPE such as overalls will be worn by employees
- Gloves are to be worn at all times
- Re-usable PPE must be thoroughly cleaned after use and not shared between workers
- Single-use PPE should be disposed of so that it cannot be re-used
- Single-use PPE is to be treated and disposed of as hazardous waste. Their disposal will be as per the contractor's guidelines.

10.2 Workplace Occupational Stressors

- Once the construction camp has been outlined and the layout of the camp confirmed the Project Manager, Construction Manager, SHE Office with the assistance of the SHE Manager and relevant
- Supervisors will set about identifying the occupational stressors.
- The SHE Officer will supply a baseline list of occupational stressors identified on other similar projects and these will be used as a guideline to identifying the project-specific stressors.
- Once these stressors have been identified, a risk assessment will be carried out to determine the significance of these stressors in each area or activity where exposure to them can be identified.
- Those areas or activities that return a "Medium to High" risk of the stressors occurring will be investigated and monitored and specific control measures implemented. These control measures will be provided in a written format for distribution to the supervisors in the areas or activities where these stressors have been identified.
- The Supervisors will be responsible for ensuring that the employees are made aware of the stressors and that they are implementing the control measures that are specified. Ongoing monitoring of the effect or presence of these stressors will be implemented. A written programme to monitor will be developed and implemented on the site for the duration of the programme.
- Should the risk assessments or the legal situation require it, an independent occupational hygiene consultant will be appointed to carry out the monitoring to determine the impact of a stressor. Where necessary, the exposure to stresses of an individual will be monitored through the medical surveillance programme and through the Employee Wellness Programme.

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10.3 Occupational Health: Medical Surveillance Programme

- It is required that all people working on the project undergoing medical examinations be examined by occupational doctor for all possible scenarios and the certificate is to indicate all categories of fitness. Medical Certificate of Fitness and Medical Records is to be completed by the OHS Practitioner. This is in order to facilitate promotions or other job function into which the employee may be promoted. This is to include the Covid- 19 requirements.
- All of these shall be submitted to the SHE Officer who shall decide on the type of employment of the individual and compile the necessary contract based on the levels of fitness and exposure which the OHS practitioner has deemed the employee fit to perform.
- Only a copy of the certificate of fitness to work may be retained on-site, but the full medical record must be available on request.

10.4 Employee Health Wellness Welfare and Assistance Programme

- The Principal Contractor must value its people and be committed to creating a positive, health and diversity-friendly working environment. The Principal Contractor will implement on-site SHE awareness training by including certain off-site SHE topics in weekly toolbox talks and must once a month conduct an off- the job topic relates to their health such as HIV, AIDS Awareness, Communicable Diseases, etc.

10.5 Alcohol and Drug Abuse Management

- A safety officer will physical examine on his/ her description that an employee on site it smelling or suspect to be under the influence of alcohol and be removed from site.
- That employee will be taken to a Doctor to conduct blood sample tests.
- A urine and saliva tests will be done as well.
- If positive result outcomes, the employee will be suspended from work.

10.6 Communications and Training

- Each supervisor shall personally conduct a Daily safe Task Instruction (DSTI) with his team, prior to the commencement of any work. This shall be done at the workplace during which he shall identify any risks present to all workers. A communication sheet and workers register are to be completed by every worker prior to starting work.
- Toolbox talk topics will conducted every morning in the Site camp by the Construction Manager 8(1) or Construction Supervisor CR 8(7) appointee] and he shall be assisted In this regard by the SHE Officer. Every person including Mandatory's must attend the daily toolbox talk. And sign an attendance register.
- Topics will be decided by the Construction Manager and SHE Officer and additional topics, including off-site topics, will be provided by the SHE Manager for discussion.



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- A weekly communication will be carried out by the SHE Officer or Construction Manager to discuss the outcome of the inspections weekly by the SHE Officer and on the first week of every month will communicate the monthly audit outcomes carried out by the SHE official client representative.
- The statutory site safety meetings will be conducted monthly and the Construction Manager, all Supervisors including Mandatory's and Contractors and all Safety Representatives on-site are required to attend. All persons will be appointed and all their appointments will be on-site documentation.
- The Construction Manager is responsible to ensure that all work is undertaken with due regard to safety and health. He/She is to ensure that every supervisor including those of Mandatory's is issued with the latest revision of the Safety Plan, Fall Protection Plan, Risk Assessments and Method Statements which pertain to their work to be performed.
- The Construction Manager will attend all SHE Meetings and will address all issues raised in such meetings. The Construction Manager will give feedback on corrective actions. The Construction Manager will sign the minutes of these meetings and submit them to the SHE & Training Manager within 7 days of the meeting. SHE issues shall be the first item on the agendas for discussion at every meeting of any natures on the project to be discussed are incidents, accidents, state of SHE awareness on the project.
- Under no circumstances may any person who has not been appointed as a member of the safety committee be allowed to participate in the meeting. This shall include client representatives, it is recognized that the intention of the legislator was only to permit members and safety representatives to attend such moving except for technical advisors, who if present, may not be permitted to vote on any issue. The minutes of the safety meeting will be filed in the SHE file on site and copies sent to the SHE & Training Manager within seven days of the meeting, having been signed by the chairman, project manager and site manager.
- The following will be discussed:
 - SHE representative deviation reports
 - All Incidents including Near Misses Risk Assessment review Method Statement (SWP) review
 - Statistics Targets and Objectives
 - SHE Awareness, incentives and awards
 - Upcoming high-risk activities
 - All Planned Job Observations and Visible Felt Leadership reports

10.7 VISITORS/ SUPPLIERS

- All visitors on-site will report to the appointed SHE Officer for a safety Induction and who will provide them with the basic PPE required. The Site Traffic Control Plan must be developed for each site that forms part of the project, which will form part of the Site Layout to ensure that all visitors and suppliers do not interfere with the construction activities and are not exposed to hazards not associated with their work.
- No visitor may perform any construction work. Persons from training institutions who are at the project solely to provide training shall only be required to attend the visitor's Induction.
- Specialists who visit the site including for example Consulting Engineers or other Consultants and client



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representative who are there only to assess or repair specific equipment shall only be required to attend the visitors' Induction prior to been allowed to commence any work.

11. EMERGENCY AND INCIDENT MANAGEMENT

11.1 Incident/ Accident Management

- It is the duty of every employee to advise his immediate supervisor or SHE representative of any situation which is unsafe and the incident in which he is involved or becomes aware. The SHE representative shall immediately advise the supervisor of any such report.
- When a supervisor becomes aware of any unsafe condition or a report of any unsafe condition or situation is made to him he shall immediately intervene and if required he shall immediately stop the activity and take appropriate action to render the situation or condition safe prior to allowing the activity to recommence.
- An incident report shall be compiled by him/her in that regard. Where an individual or group of employees has committed any unsafe act or failed to comply with any Safety Health or Environment requirement, the supervisor shall furthermore be required to investigate and report such an employee with a view to initiate disciplinary action. Should any supervisor fail in this regard, he shall be disciplined in that he will be deemed to fail in his duties as is required by law.
- The Construction Manager shall report all incidents and accidents and near misses immediately to the SHE Manager and the Project Manager as well as the client representative. The Project Manager shall in turn advise the clients' Project Manager telephonically and by e-mail.
- The Construction Manager is responsible to ensure that an Incident Report is properly completed and sent to the Client within 24 hours of the time of an accident or injury.
- The Construction Manager shall also ensure that any other contractual requirement and any client requirement in this regard is adhered to.
- The client's requirements as contained in the SHE Specification reporting, recording, investigating cost and follow-up of incidents and procedure for the effective management of SHE related incidents shall in addition also be strictly adhered to.
- All client representatives and client agents on the project are to report all incidents in which they are involved, immediately to our Site Manager who shall forthwith report them to the Project manager and SHE Manager. Any person found to have not reported any incident or who intentionally or negligently fails to follow these procedures shall be disciplined.
- Any Motor Vehicle Accident on any Public Road shall be reported to the Johannesburg Development Agency in accordance to the requirement as stipulated in the Road Traffic Act. All such accidents shall be reported as required but will not be recorded on the project statistics unless the driver is on duty and is injured.
- They shall be deemed to be covered In terms of the Road Accident Fund; however, they shall be reported to the insurance where medical treatment other than First Aid is required by the driver or any other

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employees. The client insurance shall decide based on the subsequent Investigation where to accept liability or to refer any claims to the Road Traffic Fund. Their decision will in no way impact our decision on whether or not the accident is recorded against the project statistics.

- The employees will be encouraged to report incidents through toolbox talks training; incident recalls communication. Daily Safety Task Instruction; SHE monthly meetings and through Veld Leadership

11.2 Emergency Management

- The SHE Officer will ensure that all appointed First Aiders are in possession of, or have immediate access to a first aid kit that complies with the requirement of General Safety Requirements while on-site at all times.
- The SHE officer will ensure that the first aid kits are complete and contain all the necessary items listed inside the first aid box. The SHE officer shall examine all first aid kits monthly and complete the required check sheet in that regard. Contents shall at a minimum be based on legal requirements. Additional items may be included where deemed necessary, as may have been identified in any Risk Assessment.
- A local emergency services centre will be informed of the project and be sensitized about the risks associated with the construction work to be performed in order to facilitate effective response in case of an emergency.
- Whenever any material is removed from the first aid box such material will be replaced and & report indicating the use thereof will be forwarded to Head Office SHE Department within 2 days, even if used to assist a casualty who is not an employee.
- The SHE Officer will ensure that a valid copy of First Aiders Certificates in the SHE file at all times Other trained First Aiders on each team will be appointed in writing and will also be issued with or given access to First Aid kits.

11.3 Fire Prevention and Protection

A Fire break will be established in line with the Environmental requirements to ensure that the runaway fires impact are minimized and prevented to affect the construction area. Appointment and Training on fire awareness and firefighting will be conducted to ensure that there is a trained and competent person for fire-fighting. A smoking area will be demarcated and will be established away from objects, material that can facilitate fire spread. The smoking area will be equipped with a sand bucket for extinguishing cigarettes butts and will also be equipped with a serviced fire extinguisher.



12. ASSESSMENTS AND MONITORING

A monitoring plan, schedule and programme will be established for this project which will entail all the internal and external audits, external inspections, internal inspection; planned task observations, SOC and Visible Field leadership.

12.1 Audits

The following audits will be carried out:

Internal Project audits shall be carried out on the project by the appointed SHE Manager monthly as a follow-up, but will carry out weekly inspections carried out by the SHE officer which will be used during the Client

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monthly audits. Internal project audits shall be carried out by the Principal Contractor SHE Manager at least four times during the project. Principal Contractor shall audit all Mandatory's at least once a month if applicable to ensure compliance.

Non-conformance's will be generated and issued to the Principal Contractor Project Manager based on the findings of the audits. The Principal Contractor Project Manager will ensure that these Non-conformance's are addressed and corrective action implemented.



12.2 General Inspections

The inspections will be carried out by supervisors daily using the DSTI and risk assessment review on tasks. The aim to ensure that all the risks are correctly evaluated, assessed and that the management plans are effective. The SHE Officer will carry out weekly inspections using a standard inspection checklist on every team and will communicate the outcomes with the supervisor.

12.3 Visible Felt Leadership

Visible commitment is essential to providing a safe and healthy work environment which is demonstrated at the highest level of management and that is reviewed to ensure continual improvement. Managers, supervisors and employees at all levels shall demonstrate their commitment and concern by:

- Ensuring that decisions and practices are consistent with the stated Principal Contractor Health and Safety Policy and objectives.
- Ensuring adequate resources are available to achieve the principals of the Principal Contractor Health and Safety Policy.
- Participating in risk assessments and the development of Method Statements (Safe work procedures)
- Ensures that safety issues are discussed by supervisors and employees daily through Daily Safe Task Instruction, Monthly SHE Meetings, Tool Box Talks, Incidents Communication and review and other Johannesburg Development Agency SHE engagement platforms
- Visiting all work areas regularly, perform inspections, observations and on the job communication.
- Wearing the correct Personal Protective Equipment at all time applicable for the task at hand.
- Commending safe work conditions and coaching employees who need to improve their safety performance
- Refusing to order or sanction short cuts to save time or money at the expense of safety or health.
- Placing SHE first on the agenda of all site meetings of any nature and discussing SHE performance.
- Ensures that monthly SHE meetings are held and all the areas within SHE are covered, incidents are reviewed and the working programme is in line with SHE deliverables and that all SHE actions are followed up.
- Ensuring that all incidents are reported and investigated through the Johannesburg Development Agency incident management procedure within the SHE Spec using relevant templates such as flash reports, incident investigation report and follow-up procedures that Principal Contractor has implemented.
- Participating in accident investigation and ensuring that incidents are communicated as a duty to inform (Section 13, OHS Act 85 of 1993) and follow up to prevent reoccurrences.
- Foremen and Supervisor conducting and recording of Daily Safe task Instruction (DSTIs).
- Completion of regular Job Observation by the Site Manager, Safety Practitioners, Site Supervisors and Site Foremen.
- Never walking past unsafe behaviours or conditions without immediately correcting them.

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12.4 Action Management

- Principal Contractor shall at all times strictly adhere to all legal requirements as contained in the OHS Act and relevant regulations and shall at times endeavour to comply with the clients' specifications. Regular weekly compliance inspections using a standard check sheet will be carried out by the SHE Officer on our own activities and the activities of all Mandatory's appointed by us. Where it is found that we have not complied to either legal or to other contractual.
- The SHE Manager will carry out monthly SHE Audits and will be discussed in the monthly SHE meetings.
- Any result of any Internal Compliance Audit by the SHE Manager with a score of 70% or less shall be reported to the Project Manager and Construction Manager.
- Non-Conformances and legal Contraventions raised during any audit will be communicated with Executive Management and a Root Cause Analysis will be conducted whereby preventive actions to be taken to prevent reoccurrence until it is closed.
- Formalised management reviews of the Health, Safety and Environmental Performance of the project will be undertaken on a 3 monthly basis by the Project Manager, Construction Manager, SHE officer and Principal Contractor SHE Manager. The purpose of the reviews will be to ensure the continuing suitability, adequacy and effectiveness of the SHE Plan. The following information shall be considered during the project management review.
 - Results of audits
 - Minutes of SHE Committee Meetings
 - SHE Performance Statistics
 - Incidents, accidents and near-miss reports
 - Nonconformance's and Corrective Action status
 - Follow-up actions from previous management reviews
 - Changing circumstances such as a change in legal requirements or change in the Clients requirements.

12.5 SHE Performance Reporting

Statistics shall be reported in line with the client's requirement of every Wednesday of all the Man Hours. In summary, the construction Manager will submit statistics to both the Project Manager and SHE Head Office (Administration) by no later than 08:00 each Wednesday using the Johannesburg Development Agency reporting template for the preceding week. This shall be on the prescribed form and shall include total hours worked during the previous week, by Mandatory's and third parties, and shall include all incidents and accidents and training provided.

It is imperative to note that all time worked on the project by the client or the client's agent shall be included in our statistics report and therefore the client or his agents' site representative are to be required to provide a summary of hours worked to be included in the report.

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13. DEMOBILISATION

13.1 Commissioning and Handover

The Principal Contractor will compile the commissioning risk assessment and compile a commissioning plan before the commissioning of the project. These will include the submission of Safety, health and Environmental documentation as well as the facilities. The commission risk assessment and commission plan will be submitted to the Johannesburg Development Agency Safety official for review and approval.

13.2 Site Decommissioning

The site decommissioning risk assessment and site decommissioning plan will be compiled and will be submitted to the Johannesburg Development Agency Safety Official for approval. Once approved, the Principal Contractor will then start with decommissioning as well as the SHE staffing Plan.

14. NON-CONFORMANCE AND PENALTIES

The client will issue an NCR to the contractor when the contractor is in deviation with the Health and Safety Specification or when the construction work on-site fails to meet the Health and Safety quality standards. The OHS Client Agent will issue an NCR for any risks and findings that are in contravention of the OHS Plan, Risk Assessment or client specification. If the issue is not compliant after 3 (three) NCR's, the client OHS Agent will motivate to the client for penalties. However, any issue that is of high risk will immediately result in work stoppage that is not reimbursable. Should any issues persist, The client OHS Agent will push for the removal of the appointed persons after consultation with the Project Manager of the project.

15. GENERAL

Principal Contractor shall comply with the requirements of Occupational Health and Safety Act 85 of 1993. Any contraventions of the said Act or the safety measures as contained in the safety file are noticed, the works will be stopped immediately and the contravention reported to the SHE Manager who shall institute an investigation. Authority for the works to continue will only be given after the SHE Manager and Johannesburg Development Agency Safety Official are satisfied that the task is able to carry on safely.

16. COVID-19 Preventative Measures

- There is one entry point to the site where all employees will be screened daily upon arrival.
- A record of all the information acquired will be kept on the DSTI.
- Appointed personnel will conduct a Daily Safety Task Instruction (DSTI), record individual temperatures and ask for any COVID 19 vital signs for all the employees under their area of responsibilities.
- Every employee will be required to sign the DSTI document on the acknowledgement of training confirming that all the information they are given is true to the best of their knowledge on COVID 19 vital sign.
- All employees will be requested to sanitize their hands at the site during screening before



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the start of the shift.

- The security will be responsible to ensure that every person entering the premise have been checked for COVID 19 vital signs (temperature and declaration) and sanitize their hands before proceeding into their offices. This will take place every day upon arrival on-site. There will be a register of the screening results kept.
- Sufficient alcohol-based sanitiser will be kept out in the open to ensure that it's easily available to all employees.
- Any abnormalities detected during screening will be dealt with according to the emergency management plan.
- Employees will be encouraged not to share tools where applicable or, disinfect the tools and equipment before use.

Abnormalities detected during screening (Temperatures at or above >37.5°C/ COVID 19 signs)

- Employees found to have elevated temperatures or similar COVID 19 vital signs (fever, headache, joint and muscle aches, sore throat, weakness, diarrhoea, vomiting, stomach pain) will immediately be isolated from the other workers for further examination and interview to determine the possible contact/ travel history by the OMP. Such employees will be isolated in an area designated by the contractor.
- The Contracts Manager will be informed immediately and inform the OMP about the abnormalities and request him/her to take full charge but informing the contracts manager about all the proceedings.
- The suspected employee will be kept in isolation until the ambulance service arrives.
- Once the suspected employee is removed from the isolation point, the area will be cleaned, disinfected thoroughly, waste material placed inside a toxic waste container and disposed of by a registered waste removal company.
- High-pressure jet spray shall not be used in confined spaces during cleaning.
- Physical material like blood and vomitus must be first cleaned up and removed before terminal cleaning commences.
- Containers with secretions, excretions, and other waste products such as vomitus and blood should be flooded with a copious amount of disinfectant for at least 30 minutes.

Working on Site

- Tools and equipment will be wipe down with a disinfectant solution before it is used, during use and after use to make sure that when tools exchange hands it is clean and disinfected.
- Employees will work not close together and spaces of 2 meter will be implemented between employees. This will be mandatory to make sure all employees stay a safe distance from each other.
- Activities that where human contact is unavoidable, should be postponed and avoided as far as possible. If it is vital for human contact, extra special care should be taken in terms of wearing gloves, good quality face masks.
- It is the responsibility of every employee to make sure he or she is wearing the PPE issued and use correctly at all times.
- It is the responsibility of every employee to report any contact with a COVID-19 infected person before the commencement of work daily
- In any case of cuts or bruises must be attended to immediately



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- Thero Services issued permit is to be carried by the employee at all times
- Smoking on-site is prohibited
- There will be no congregation of employees during lunchtime.



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ANNEXURE: Relevant Summarised Project Legal References

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation (CR) 4	Notice of carrying out Construction work	Department of Labour notified Copy of Notice available on Site
General Admin. Regulation 4	*Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations on site. Readily available for perusal by employees.
COID Act Section 80. CR 5 (1)(j)	*Registration with Compels. Insurer	Written proof of registration/Letter of good standing available on Site
Construction. Regulation 4 & 5(1)	H&S Specification & Programme	H&S Spec received from Client and/or its Agent on its behalf OH&S programme developed & Updated regularly
Section 8(2)(d) Construction. Regulation 9	*Hazard Identification & Risk Assessment	Hazard Identification carried out/Recorded Risk Assessment and – Plan drawn up/Updated RA Plan available on Site Employees/Sub-Contractors informed/trained
Section 16(2)	*Assigned duties (Managers)	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Construction. Regulation(CR) 8(1)	Designation of Person Responsible on Site	Competent person appointed in writing as Construction Supervisor with job description
Construction. Regulation 8(7)	Designation of Assistant for above	Competent person appointed in writing as Assistant Construction Supervisor with job description
Section 17 & 18 General Administrative Regulations 6 & 7	*Designation of Health & Safety Representatives	More than 20 employees - one H&S Representative, one additional H&S Rep. for every 50 employees or part thereof. Designation in writing, period and area of responsibility specified in terms of GAR 6 & 7 Meaningful H&S Rep. reports. Reports actioned by Management.
Section 19 & 20 General Administrative Regulations 5	*Health & Safety Committee/s	H&S Committee/s established. All H&S Reps shall be members of H&S Committees Additional members are appointed in writing. Meetings held monthly, Minutes kept. Actioned by Management.



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Section 37(1) & (2)	*Agreement with Mandatories/ (Sub-)Contractors	Written agreement with (Sub-)Contractors List of (Sub-)Contractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Supervisor designated Written arrangements re. H&S Reps & H&S Committee Written arrangements re. First Aid
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	*Reporting of Incidents (Dept. of Labour)	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1?)(WCL 1 or 2) and to the Client and/or its Agent on its behalf Cases of Occupational Disease Reported Copies of Reports available on Site Record of First Aid injuries kept
General Admin. 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 the investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at H&S Committee meeting Action taken by Site Management.
Construction. Regulation 10	Fall Prevention & 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/updated Available on Site
Construction. Regulation 11	Structures	Information re. the structure being erected received from the Designer including: - geoscience technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers/hazards/special measures to construct safely Risk Assessment carried out A method statement is drawn up All above available on Site Structures inspected before each shift. Inspections register kept
Construction. Regulation 16	Scaffolding	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees



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		<p>available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept</p>
Construction. Regulation 13	Excavations	<p>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 Inspected: - before every shift - after any blasting - after an unexpected fall of ground - after any substantial damage to the shoring - after rain. Inspections register kept Method statement developed where explosives will be/ are used</p>
Construction. Regulation 19	Materials Hoist	<p>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. Inspections register kept.</p>
Construction. Regulation 22 Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	<p>Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - daily by operator - Tower Crane/s - after erection/6monthly - Other cranes - annually by comp. person - Lifting tackle(slings/ropes/chain slings etc.) - daily or before every new application</p>
Construction. Regulation 24 Electrical Machinery	*Inspection & Maintenance of Electrical Installation & Equipment	<p>Competent person appointed in writing to inspect/test the installation and equipment. Written Proof of Competence of above appointee available on Site.</p>



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Regulations 9 & 10/ Electrical Installation Regulations	(including portable electrical tools)	Inspections: - Electrical Installation & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools, electric lights and extension leads must be uniquely identified/numbered. Weekly visual inspection by User/Issuer/Storeman. Register kept.
Construction. Regulation 28 General Safety Regulation 8(1)(a)	*Designation of Stacking & Storage Supervisor.	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site
Construction. Regulation 29/ Environmental Regulation 9	Designation of a Person to Co-ordinate Emergency Planning And Fire Protection	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practiced - Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out All Fire Extinguishing Equipment identified and on the register . Inspected weekly. Inspection Register kept Serviced annually
General Safety Regulation 3	*First Aid	Every workplace provided with a sufficient number of First Aid boxes. (Required where 5 persons or more are employed) First Aid freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aid Officials and Certificates Name of person/s in charge of First Aid box/es displayed. Location of First Aid boxes clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries
General Safety Regulation 2	Personal Safety Equipment (PSE)	PSE Risk Assessment carried out Items of PSE prescribed/use enforced Records of Issue kept Undertaking by Employee to use/wear PSE PSE remain property of Employer, not to be removed from premises GSR 2(4)



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General Safety Regulation 9	*Inspection & Use of Welding/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 All new vessels checked for leaks, leaking vessels NOT taken into stock but returned to the supplier immediately Equipment identified/numbered and entered into a register Equipment inspected weekly. Inspection Register kept Separate, purpose-made storage available for full and empty vessels
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 23	*Control of Storage & Usage of HCS and Flammables	Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS (including Flammables) Written Proof of Competence of above appointee available on Site Risk Assessment carried out Register of HCS kept/used on Site Separate, purpose-made storage available for full and empty containers
Construction. Regulation 23	Construction Vehicles & Earth Moving Equipment	Operators/Drivers appointed to: - Carry out a daily inspection prior to use - Drive the vehicle/plant that he/she is competent to operate/drive Written Proof of Competence of above appointee available on Site. Record of Daily inspections kept
General Safety Regulation 13A	*Inspection of Ladders	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on-site and weekly thereafter. Inspections register kept Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in a register
General Safety regulation 13B	Ramps	Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept. Daily inspected and noted in a register



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PALLADIUM RISK MATRIX

PROBABILITY (P)	SEVERITY (S)				FREQUENCY (F)
	EFFECT		Productivity (PR)	Cost Implications (C)	
	Injury / Illness (I)	Environmental Effect (E)			
0. No exposure to the Hazard can arise during any single task.	0. No First Aid or Medical Attention necessary. No contact or injury can occur.	0. No Environmental Effect.	0. No Lost time.	0. Zero cost implication.	0. Hazard arises at period greater than 5 years.
1. Highly Improbable that exposure to the Hazard will arise during any single task.	1. First Aid or Medical Attention.	1. Insignificant Effect - Proper & immediate cleanup will eliminate effect immediately.	1. Loss of Less than 1 man shift	1. R0 - R999	1. Hazard arises every 5 years
2. Unlikely that exposure to the Hazard will arise during any single task.	2. 1-13 Days off Normal Duty with Full Recovery	2. Short Term - 1 day to 6 months	2. Loss of 1 day production on team	2. R1000 - R9999	2. Hazard arises once a year
3. Possible that exposure to the Hazard will arise during any single task.	3. 14 Days or more off Normal Duty with Full Recovery	3. Medium Term - 6 months to 24 months	3. Loss of 2 days to 7 days production on team.	3. R10 000 - R99 999	3. Hazard arises once a month
4. Probable that exposure to the Hazard will arise during any single task.	4. Slight or Severe Permanent Disability	4. Long Term - 24 months to 5 years	4. Loss of 8 days to 30 days production on team.	4. R100 000 - R999 999	4. Hazard arises once a week
5. Almost Certain or Inevitable that exposure to the Hazard will arise during any single task.	5. Fatality	5. Permanent - more than 5 years	5. Loss of 1 days production on Project	5. R1 000 000 +	5. Hazard is permanent

RISK RESULTS (Expressed as a %)

Low	Medium	High	Extremely High
0-40%	41-60%	61-80%	81-100%

ACTION

LOW - Monitor and review every 12 months	MEDIUM - Monitor and Review every 6 months - PRIORITY 3.	HIGH - Monitor and Review 3 months	EXTREMELY HIGH - STOP ALL WORK - Take immediate action. Re-assess. -PRIORITY 1
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Definition of Review - revisit to establish if valid - if changes required, then new written revision will be issued.

Task / Activity	Activity Description	Hazard / Aspect (What are the danger)	Impact/Risk (What can go wrong)	S or H	Legal / Policy Commitment	Base/Core Ranking										Recommended steps for controlling Hazard	Residual Ranking					Responsible person	Timeframe	
						Legal Compliance (Y or N)	Normal(N) Abnormal(A) Emergency(E)	Probability	Injuries/Illness/Environment	Productivity	Cost Implications	Severity	Risk Rating %	Significance	Probability		Injuries/Illness/Environment	Productivity	Cost Implications	Severity	Risk Rating %			Significance
1. Designs and Drawings	Interpretation of Drawings	1.1A Inadequate/unsafe designs from the design	1.2A Fatalities	S	Construction Regulation (CR) 6	Y	N	5	5	4	5	5	96	EH	1.3A Design of contract to be awarded to a designer by the client	2	2	2	2	3	44	M	Client	Ongoing
		Designs and drawings from unqualified and incompetent designers	1.2B Injuries	H	OHS ACT Section 8	Y	N	5	5	4	5	5	96	EH	- Johannesburg Development Agency. Designers to be either a qualified Architect or a registered and appointed Engineer. Health and Safety Specifications to be provided to the designer. Designer to take Health and Safety into consideration when designing.	2	2	2	2	3	44	M	OHS Agent	
			1.2C Property Damage			Y	N	5	5	5	5	5	100	EH		2	2	2	2	3	44	M	Consulting Engineer	
			1.2D Reputational Harm			Y	N	5	5	5	5	5	100	EH		2	2	2	2	3	44	M		
		1.1B Contractor incompetent in interpreting designs	1.2A Fatalities	S	Construction Regulation 5	Y	N	4	5	5	5	5	96	EH	1.3B Contractor to be evaluated prior to awarding the tender. Contractor to be appointed in terms of CR 5(1)(k) of Construction Regulations 2016 and in terms of Section 37(2) of the OHS Act 85 of 1993.	2	2	2	2	3	44	M	Client	Ongoing
			1.2B Injuries	H	OHS ACT Section 8	Y	N	4	5	5	5	5	96	EH		2	2	2	2	3	44	M	OHS Agent	
			1.2C Property Damage		OHS ACT Section 37(2)	Y	N	4	5	5	5	5	96	EH		2	2	2	2	3	44	M	Consulting Engineer	
			1.2D Reputational Harm			Y	N	4	5	5	5	5	96	EH		2	2	2	2	3	44	M		
2. Procurement	Material and tools procurement	2.1A Inadequate provision made for Health and Safety	2.2A Fatalities	S	OHS Act GSR 2	Y	N	5	5	4	5	5	96	EH	2.3A Provision has to be made for Health and Safety in the tender documents. When a prospective contractor tenders for the project, his tender submission is to be evaluated to ensure that he has made provision for adequate Health and Safety resources. The project specification is to be taken into account when preparing a tender submission.	2	2	2	3	2	44	M	Client	Ongoing
		Procurement of incorrect materials and tools	2.2B Injuries	H	Construction regulation (CR) 7	Y	N	5	5	4	5	5	96	EH		2	2	2	3	2	44	M	OHS Agent	
		Procurement of incorrect PPE and ancillary	2.2C Property Damage			Y	N	5	5	4	5	5	96	EH		2	2	2	3	2	44	M	Consulting Engineer	
			2.2D Reputational Harm			Y	N	5	5	4	5	5	96	EH		2	2	2	3	2	44	M		
	Management of procurement process in statutory positions	2.1B Incompetent employees appointed	2.2A Fatalities			Y	N	5	5	5	4	5	96	EH	2.3B All prospective employees that will be appointed in statutory positions must be evaluated by the prospective contractor as part of their selection process. The CV's and qualifications of these employees are to be submitted as part of the OHS File to the Clients Representative to evaluate and approve. Also refer to 1.3B.	2	3	2	2	2	44	M	Client	Ongoing
			2.2B Injuries			Y	N	5	5	5	4	5	96	EH		2	3	2	2	2	44	M	OHS Agent	
			2.2C Property Damage			Y	N	5	5	5	4	5	96	EH		2	3	2	2	2	44	M	Consulting Engineer	
			2.2D Reputational Harm			Y	N	5	5	5	4	5	96	EH		2	3	2	2	2	44	M		
3. Site Access	Site Camp access	3.1A Unauthorised access granted to contractor	3.2A Civil Unrest	S	General Administrative Regulations (GAR)	Y	A	5	4	5	4	5	92	EH	3.3A Client to grant access in writing to the contractor. Public Participation and consultation meetings to be held with the community informing them about the intended works.	2	2	2	3	2	44	M	Client	Ongoing
			3.2B Reputational Harm	H	OHS Act Section 8	Y	A	5	5	5	5	5	100	EH		2	2	2	3	2	44	M	OHS Agent	
			3.2C Property Damage			Y	A	5	5	5	4	5	96	EH		2	2	2	3	2	44	M	Consulting Engineer	
			3.2D Theft			Y	A	5	4	5	5	5	96	EH		2	2	2	3	2	44	M		
	Barricading	Barricading and open- access to the public	3.2A Civil Unrest			Y	A	5	4	5	4	5	92	EH		2	2	2	3	2	44	M		
		Temporary access is not granted	3.2B Reputational Harm			Y	A	5	5	5	5	5	100	EH		2	2	2	3	2	44	M		
			3.2C Property Damage			Y	A	5	5	5	4	5	96	EH		2	2	2	3	2	44	M		
			3.2D Property loss due to Theft			Y	A	5	4	5	5	5	96	EH		2	2	2	3	2	44	M		

4. Transportation of material/equipment/ tools/containers to/from site	4.1A Untrained driver	4.2A Fatalities	S	Construction Regulation 23	Y	A	4	4	4	4	5	84	EH	4.3A Driver to be licensed, authorised. Induction to be done.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries	H	OHS Act Section 8	Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M	OHS Agent	
	Transportation of material/equipment/ tools/containers to/from site	4.2C Property Damage		National Road Traffic Act	Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
	4.1B Unroadworthy vehicle	4.2D Civil claims			Y	A	4	4	4	4	5	84	EH	4.3B Vehicle to be inspected every time before coming onto site. Pre use inspection to be done.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2E Reputational harm			Y	A	4	4	4	4	5	84	EH	Vehicle to be fitted with a orange rotating light.									
	4.1C Material/equipment/containers not secured properly	4.2C Property Damage			Y	N	3	4	4	4	5	80	H	4.3C Material/equipment to be properly secured. No "satan" type levers. Load to be inspected before coming onto site.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	N	3	4	4	4	5	80	H		2	3	2	2	3	48	M		
		4.2F Property loss due to Theft			Y	N	3	4	4	4	5	80	H		2	3	2	2	3	48	M		
	4.1D Unsafe road conditions	4.2A Fatalities			Y	A	4	4	4	4	5	84	EH	4.3D Driver to adhere to speed limits and Road Signage. If driving in inclement weather conditions, driver to drive according to conditions.	2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2C Property Damage			Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2D Civil claims			Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2E Reputational harm			Y	A	4	4	4	4	5	84	EH	4.1E Driver to adhere to speed limits and road signs. If driving on site vehicle to be escorted to the designated area. Head Lights to be on, as well as strobe light.	2	3	2	2	3	48	M	Contractor	Ongoing
	4.1E Collision with other vehicles/property	4.2A Fatalities			Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
		4.2B Injuries			Y	A	4	4	4	4	5	84	EH	Flagman to be identified and visible.	2	3	2	2	3	48	M		
		4.2C Property Damage			Y	A	4	4	4	4	5	84	EH		2	3	2	2	3	48	M		
	4.1F Theft	4.2A Fatalities			Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
		4.2C Property Damage			Y	A	5	4	4	4	5	88	EH	4.3F When leaving departure point, driver is to drive straight to site. If possible, drive during day time on pre-determined routes.	2	3	2	2	3	48	M		
		4.2E Reputational harm			Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
		4.2F Property loss due to Theft			Y	A	5	4	4	4	5	88	EH		2	3	2	2	3	48	M		
	4.1G Talking on cell phone while driving	4.2A Fatalities			Y	A	4	4	4	4	5	84	EH	4.3G Driver to wait until he arrives at the designated area. No talking on cell phone while driving.	2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
		4.2C Property Damage			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
	4.1H Driving while under the influence of alcohol/d	4.2A Fatalities			Y	A	4	4	4	4	5	84	EH	4.3H Random alcohol test with a breathlyser to be done on drivers w arriving on site everyday. Induction to be done.	2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
		4.2C Property Damage			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
	4.1I Speeding	4.2A Fatalities			Y	A	4	4	4	4	5	84	EH	4.3I Driver to adhere to on-site speed limit of ~8km/h in congested ar	2	2	3	2	3	48	M	Contractor	Ongoing
		4.2B Injuries			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
		4.2C Property Damage			Y	A	4	4	4	4	5	84	EH		2	2	3	2	3	48	M		
5. Site Establishment																							

	Sanitation Facilities	5.1A Unauthorised access onto property	5.2A Injuries	S	Facilities Regulations	Y	A	4	5	4	5	5	92	EH	5.3A Client to grant access in writing to the contractor. Public Participation and consultation meetings to be held with the community informing them about the intended works.	2	2	3	2	3	48	M	Contractor	Ongoing
	Eating area (Dining rooms)		5.2B Property Damage			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	OHS Agent	
	Designated Parking areas		5.2C Civil Unrest	H	General Administrative Regulations	Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	Client	
	Site Office		5.2D Theft			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	Lockable flammable materials storage		5.2E Reputational Harm			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	Tools Storage area																							
	Drinking water	5.1B Poor planning of the project leading to incomplete establishment of the construction area	5.2A Injuries		OHS Act Section 8	Y	A	4	5	4	5	5	92	EH	5.3B Activity to be planned properly and instructions to be given to a person nominated by the Contractor and the Client's Representative	2	2	3	2	3	48	M	Contractor	Ongoing
	Ergonomics		5.2B Property Damage			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	OHS Agent	
	Changing rooms		5.2C Civil Unrest		CR 7	Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
			5.2D Theft			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	A	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		5.1C Poor Communication	5.2A Injuries			Y	N	5	4	5	5	5	96	EH	5.3C Formal communication to be evident between the contractor and the Client.	2	2	3	2	3	48	M	Contractor	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2D Theft			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.1D Damaging existing services e.g. sewage, powercables, subsoil drains system during connections of the services to the site camp	5.2A Injuries		Facilities Regulations	Y	N	5	4	5	5	5	96	EH	5.3D Where possible existing service provider to be used to ensure knowledge of existing services. If not, a alternative service provider to be used and to be monitored.	2	2	3	2	3	48	M	Contractor	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2F Acute and Chronic Illnesses			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.1E Poor refuse removal/No removal of waste during the demolishing of the excavations and site concrete pallisade wall	5.2A Injuries			Y	N	5	4	5	5	5	96	EH	5.3E Refuse removal service provider to be appointed upon establishment. Waste removal/ disposal slips to be kept with the OHS File on site.	2	2	3	2	3	48	M	Contractor	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2F Acute and Chronic Illnesses			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.1F Employees untrained and incompetent utilised during the establishment phase from the principal contractor or suppliers	5.2A Injuries			Y	N	5	4	5	5	5	96	EH	5.3F Employees assisting with this activity to be trained- documented on the Job training to be done by the supervisor.	2	2	3	2	3	48	M	Contractor	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
															5.3G All tools to be inspected everyday prior to use as well as equipment. Material used to be in accordance with designs specifications and the relevant SANS code.	2	2	3	2	3	48	M	Contractor	Ongoing
		5.1G Tools/material/equipment unsafe/poor	5.2A Injuries			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH	All tools to be inspected by the appointed person and to be colour coded or marked so they can be easily identified.	2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2G Fatalities			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.1H Social Disruption caused by lack of communication on project establishment- Employment, community risks and safety, traffic disruptions	5.2A Injuries			Y	N	5	4	5	5	5	96	EH	5.3H Permission to be granted from the community .	2	2	3	2	3	48	M	Client	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	Contractor	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
		5.1I Contractors/ Service providers working on site without being approved by the OHS department	5.2A Injuries			Y	N	5	4	5	5	5	96	EH	3.3I All contractors/ service providers to report to the OHS Department before any work starts.	2	2	3	2	3	48	M	Contractor	Ongoing
			5.2B Property Damage			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M	OHS Agent	
			5.2C Civil Unrest			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		
			5.2E Reputational Harm			Y	N	5	4	5	5	5	96	EH		2	2	3	2	3	48	M		

8. Loading/offloading of plant from lowbed	8.1A Sub standard lowbed	8.2A Fatalities	S	Construction Regulation 23	Y	N	4	5	4	5	5	92	EH	8.3A Lowbed to be authorised, inspected and approved.	2	2	3	2	3	48	M	Contractor	Ongoing
	Loading/Offloading of plant from lowbed	8.2B Injuries	H	General Machinery Regulations	Y	N	4	5	4	5	5	92	EH	Pre-use checks to be done and Maintenance records to be available on request.	2	2	3	2	3	48	M	OHS Agent	
8.2C Property Damage				Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M	Consulting Engineer		
8.2D Civil Claims				Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M			
8.2E Reputational harm			OHS Act Section 8	Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M			
				CR 27																			
	8.1B Untrained driver	8.2A Fatalities		CR 28	Y	N	4	5	4	5	5	92	EH	8.3B Driver to be trained, appointed and authorised.	2	2	3	2	3	48	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH	Minimum one Planned Task Observation on driver to be done.	2	2	3	2	3	48	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	8.1C Poor ground conditions	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3C Ground conditions to be checked prior to loading/offloading from lowbed. If ground conditions are poor, alternative area to be allocated.	2	2	3	2	3	48	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		2	2	3	2	3	48	M		
	8.1D Plant falling from lowbed while loading/ offloading to/ from lowbed	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3D Driver of plant being loaded/offloaded to be aware of surroundings and dimensions of lowbed. Signal man to assist but to stand in front of the plant to enhance visibility. Secondary signalman to stand at the rear to communicate to the primary signalman/ operator but not to stand closer than 5 meters from the plant.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1E Unauthorised access into loading zone	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3E No unauthorised employees to be within 5 meters from lowbed and access to be controlled.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1F Driving in inclement weather conditions	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3F Drivers to drive according to conditions. Driver to adhere to speed limits and signage.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1G Poor communication	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3G Rigger and Operator to communicate via hand signals and use whistle. Radios to be used if line of sight is obstructed	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1H Oil/diesel spill	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3H Drip tray and rags to be available on plant and lifting machines. Operators to be trained on a spillage procedure.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1I Driver not medically fit	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3I Driver to have passed Medical Evaluation and to be declared medically fit by an OHP. Proof of medicals to be always available and recorded in the OHS file on site and produced on request.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1J Driver under the influence of alcohol/ drugs	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3J Driver not allowed to drive while under the influence alcohol, drugs or any other toxic substance. Random tests to be done and records to be always kept in the OHS file on site	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1K Driver under medication	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3K Driver to declare if he/ she is using medication especially if alcohol is in the medication. Proof of the medication to be evident e.g. Box with the contents of the medication.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
	8.1L Fatigue	8.2A Fatalities			Y	N	4	5	4	5	5	92	EH	8.3L Prior to driving the driver to ensure at least 8 hours rest of 24 hours if fatigue persists, driver to consult a doctor immediately to avoid unnecessary incidents/accidents on site.	3	3	3	3	3	60	M	Contractor	Ongoing
		8.2B Injuries			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2C Property Damage			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2E Reputational harm			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
		8.2F Slips and Trips			Y	N	4	5	4	5	5	92	EH		3	3	3	3	3	60	M		
9. Housekeeping																							
Stacking & Storage of material/equipment.	9.1A Nip/pinch points	9.2A Injuries	S	Construction Regulation 28	Y	N	4	4	4	4	4	80	H	9.3A Employees to wear correct PPEs such as leather gloves. Emph to ensure safe placement of hands when offloading.	3	2	2	2	3	48	M	Contractor	Ongoing
		9.2D Cuts	H	OHS Act Section 8	Y	N	4	4	4	4	4	80	H		3	2	2	2	3	48	M	OHS Agent	
	Stacking & Storage of material/equipment.			CR 27																		Consulting Engineer	
		9.1B Unsafe stacking practices	9.2A Injuries			Y	N	4	5	5	5	96	EH	9.3B Employees to be trained in the proper stacking Procedure. The base of a stack to be 3 times the height. Walkways of at least 1,5 m to be left between stacks. Dunnage/ sandbags underneath stacks to be placed at the edges to prevent tripping. No protruding dunnage/ sandbags in walkways.	3	2	2	2	3	48	M	Contractor	Ongoing
		9.2B Fatalities			Y	N	4	5	5	5	96	EH		3	2	2	2	3	48	M			
	9.1C Snake/insect bites	9.2A Injuries			Y	N	4	5	5	5	96	EH	9.3C Employees to check area before handling material. Do visual inspection of stacks, stamp feet, turn material over with plant or feet. Hooks to be used to minimize exposure to insects/ snakes. All grass/ weeds to be kept short.	3	2	2	2	3	48	M	Contractor	Ongoing	
		9.2B Fatalities			Y	N	4	5	5	5	96	EH		3	2	2	2	3	48	M			
		9.2C Acute and chronic illness			Y	N	4	5	5	5	96	EH		3	2	2	2	3	48	M			
	9.1D Untrained employees	9.2A Injuries			Y	A	4	5	5	5	96	EH	9.3D Employees to be trained in the Stacking Procedure.	3	2	2	2	3	48	M	Contractor	Ongoing	
		9.2B Fatalities																					

12. Welding		12.1A Unsafe equipment	12.2A Fatalities	S	General Safety Regulations 9	Y	N	5	4	5	5	5	96	EH	12.3A All equipment to be inspected monthly by a appointed	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries	H	Construction Regulation 24 Driven Machinery Regulation 8 Noise Induced Hearing Loss Regulations 12	Y	N	5	4	5	5	5	96	EH	employee and records to be kept on-site in the file. To be inspected c before use.	2	2	3	2	3	48	M	OHS Agent	
		12.1B Untrained welder	12.2A Fatalities			Y	N	5	4	5	5	5	96	EH	12.3B Welder to be trained. To be tested upon arrival on	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	5	4	5	5	5	96	EH	site by the Designated person. Trade papers to be evident.	2	2	3	2	3	48	M		
		12.1C Sub standard PPE	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3C Designated relevant PPEs such as Leather apron, leather spa	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	long leather gloves, welding helmet, respirator if welding on Stainless	2	2	3	2	3	48	M		
															overall, safety shoes, ear plugs to be worn. Assistant also to wear PPE as specified. No nylon clothing, no jewellery to be worn.									
		12.1D Poor spark containment	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3D Welding screens to be used. Fire blankets to be used.	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	Not to weld in close proximity of other employees.	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Fires			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1E Unauthorised access into area	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3E Area to be barricaded and signs to be posted.	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1F Fire	12.2C Severe burns			Y	N	4	5	5	5	5	96	EH	12.3F Fire extinguisher to be present, fire watch. Hot work	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2D Fires			Y	N	4	5	5	5	5	96	EH	permit to be issued and approved. Pre work inspection to be done to ensure that all combustibles/flammables have been removed as far as practical. Post work inspection to be done to ensure no possible ignition.	2	2	3	2	3	48	M		
		12.1G Unsafe welding practices	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3G Ensure firm footing. Earthing point to be as close as	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	possible to the striking point.	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Fires			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1H Welding overhead unsafely	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3H Area underneath to be barricaded, signage posted	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	and spotter to be present to ensure no access.	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Fires			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1I Working in wet conditions	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3I No work to be done in wet conditions.	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1J Poor cable layout	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3J Welding cables/extension to be routed in a safe	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	manner as not to pose a tripping hazard. No coiled	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH	extensions.	2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1K Failure to lock out	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3K Employee to be trained in the Lock out Procedure. If	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	not working with the machine, it is to be unplugged.	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
		12.1L Electrical Shock	12.2A Fatalities			Y	N	4	5	5	5	5	96	EH	12.3L All electrical equipment to be inspected before use	2	2	3	2	3	48	M	Contractor	Ongoing
			12.2B Injuries			Y	N	4	5	5	5	5	96	EH	daily. Also to be inspected monthly by a trained, qualified, competent	2	2	3	2	3	48	M		
			12.2C Severe burns			Y	N	4	5	5	5	5	96	EH	and appointed personnel/employee and records to be kept on-site.	2	2	3	2	3	48	M		
			12.2D Electrical shock			Y	N	4	5	5	5	5	96	EH		2	2	3	2	3	48	M		
13. Use of ladder	Use of ladder	13.1A Unsafe ladder	13.2A Injuries	S	General Safety Regulation 13	Y	N	4	4	4	5	4	84	EH	13.3A Ladders to be inspected by a appointed person	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage	H	OHS Act no 85 of 1993	Y	N	4	4	4	5	4	84	EH	monthly and records to be kept on-site.	2	2	3	3	2	48	M	OHS Agent	
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1B Poor ground conditions	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3B Ground conditions to be inspected before ladder	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	is to be used.	2	2	3	3	2	48	M		
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1C Employees falling from ladder while ascending/descending	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3C Employees to ensure firm footing when climbing and	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	maintain 3-point contact.	2	2	3	3	2	48	M		
			13.2C Civil claims			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1D Unsafe use of stepladder	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3D One employee holds the ladder at the bottom while	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	other employee climbs the ladder. Top part of the ladder to exceed the landing point by at least 900mm. No ladder will be used as a working platform.	2	2	3	3	2	48	M		
						Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1E Ladder tipping over	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3E One employee to hold on to ladder while other	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	employee climbs. Ladder to be secured at the bottom when	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH	climbing into/ out of an excavation.	2	2	3	3	2	48	M		
		13.1F Slipping while climbing	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3F Employee to ensure firm footing. Not to climb the ladder during	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	wet weather conditions or where neither the ladder or the safety boots	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1G Reflection of sun from ladders	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3G Employees to ask for dark safety goggles where the	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	reflection is too strong.	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1H Climbing with tools/nuts/bolts in hand	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3H Bolt bags are to be used. No employee will be	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	allowed to climb a ladder with any tools in his hand.	2	2	3	3	2	48	M		
			13.2D Temporary or permanent Disability			Y	N	4	4	4	5	4	84	EH		2	2	3	3	2	48	M		
		13.1I Metal ladders near electric lines	13.2A Injuries			Y	N	4	4	4	5	4	84	EH	13.3I Wooden ladders to be used when working in the	2	2	3	3	2	48	M	Contractor	Ongoing
			13.2B Property Damage			Y	N	4	4	4	5	4	84	EH	close proximity of electric lines.	2	2	3	3	2	48	M		

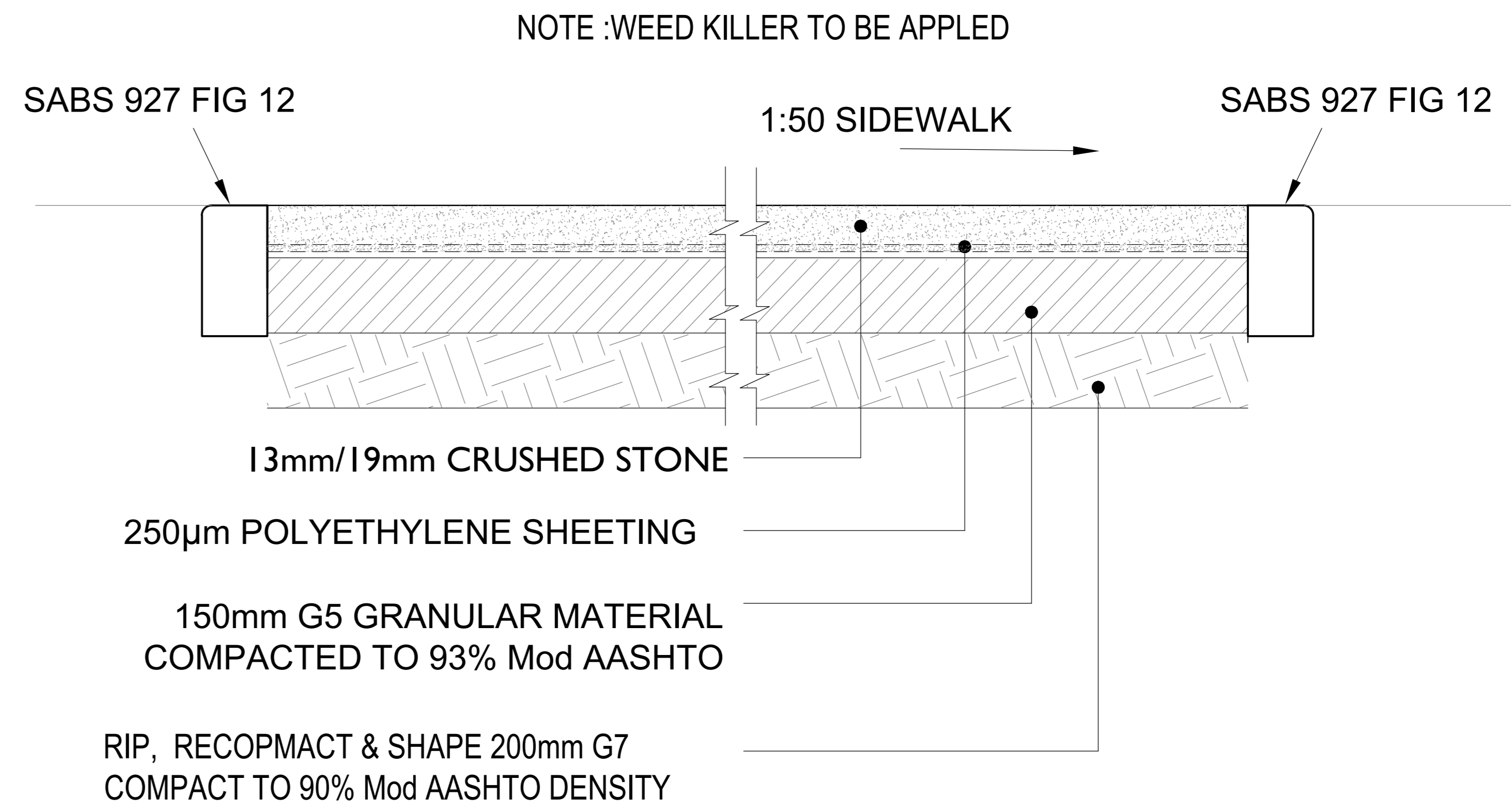
15. Hazardous Chemicals, Materials and substance storage	Cement Concrete Paint	15.1A Sub standard storage	15.2A Injuries	S	OHS Act Hazardous Chemical Substan	Y	N	4	4	4	4	5	84	EH	15.3A Compatibility study to be done to ensure that	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses	H	Regulations	Y	N	4	4	4	4	5	84	EH	substances with an adverse effect on each other are not	3	3	2	2	3	52	M	OHS Agent		
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH	stored together. CR 28.	3	3	2	2	3	52	M					
		15.2D Fatalities	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.1B Spills	15.2A Injuries			Y	N	4	4	4	4	5	84	EH	15.3B Drip tray under store to be placed and quantity to be	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses			Y	N	4	4	4	4	5	84	EH	displayed.	3	3	2	2	3	52	M			
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.2D Fatalities	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.1C Poor ventilation	15.2A Injuries			Y	N	4	4	4	4	5	84	EH	15.3C Store to be adequately ventilated to ensure no build	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses			Y	N	4	4	4	4	5	84	EH	up of fumes.	3	3	2	2	3	52	M			
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.2D Fatalities	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.1D Unauthorised access	15.2A Injuries			Y	N	4	4	4	4	5	84	EH	15.3D Store to be controlled by appointed employee. To be	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses			Y	N	4	4	4	4	5	84	EH	locked and key to be kept with appointed employee.	3	3	2	2	3	52	M			
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH	Register to be implemented to control issue of HCS's.	3	3	2	2	3	52	M					
		15.2D Fatalities	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.1E Fire	15.2A Injuries			Y	N	4	4	4	4	5	84	EH	15.3E Fire extinguishers to be posted. MSDS's to be	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses			Y	N	4	4	4	4	5	84	EH	studied to ensure correct Fire extinguishers are posted.	3	3	2	2	3	52	M			
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.2D Fatalities	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
		15.1F Containers not identified	15.2A Injuries			Y	N	4	4	4	4	5	84	EH	15.3F All containers to be identified.	3	3	2	2	3	52	M	Contractor	Ongoing
		15.2B Acute and Chronic Illnesses			Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M			
		15.2C Poisoning	Y	N	4	4	4	4	5	84	EH		3	3	2	2	3	52	M					
16. Excavations Works	Electrical cables trench excavation Earthworks structures	16.1A Material or tools falling into excavations	16.2A Fatalites	S	Construction Regs 13	Y	N	4	5	4	5	5	92	EH	16.3A No loose material or tools to lie within 1,5m from the	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries	H	General Safety Regs	Y	N	4	5	4	5	5	92	EH	edge of an excavation.	3	2	3	3	3	56	M	OHS Agent		
		16.2C Civil claims	Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M	Consulting Engineer				
		16.2D Reputational Harm	Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M					
		16.1B People/ animals falling into excavations	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3B If excavations are not situated in the servitude, it is	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	to be barricaded if left open overnight with temporary solid	3	2	3	3	3	56	M			
		16.2C Civil claims	Y	N	4	5	4	5	5	92	EH	barricading preferably. If situated in the servitude, the	3	2	3	3	3	56	M					
		16.2D Reputational Harm	Y	N	4	5	4	5	5	92	EH	access gates to be locked to prevent unauthorised access	3	2	3	3	3	56	M					
		16.1C Excavations not identified/ controlled	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3C All excavations to be inspected daily, after blasts	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	and inclement weather. Excavations to be numbered and	3	2	3	3	3	56	M			
		16.2C Civil claims	Y	N	4	5	4	5	5	92	EH	records of inspections to be kept.	3	2	3	3	3	56	M					
		16.2D Reputational Harm	Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M					
		16.1D Excavations flooding	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3D If employees needs to work in flooded excavations,	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	spotter needs to be present with a life jacket or life boy. If	3	2	3	3	3	56	M			
		16.2C Civil claims	Y	N	4	5	4	5	5	92	EH	possible, employees not to work in flooded excavations.	3	2	3	3	3	56	M					
		16.2D Reputational Harm	Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M					
		16.1E Untrained employees	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3E Employees and Supervisor to be trained on the	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	requirements and procedures applicable to excavations.	3	2	3	3	3	56	M			
		16.1F No supervisor	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3F Supervisor to be present at all times. If he needs to	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	leave the area, he is to delegate his authority to another	3	2	3	3	3	56	M			
		16.1G Sides of excavation collapsing	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3G Where possible, the sides to be battered 45 degrees.	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	If not, excavation to be shored, boxed or propped - See	3	2	3	3	3	56	M			
		16.1H Damaging existing services	16.2C Civil claims			Y	N	4	5	4	5	5	92	EH	16.3H Supervisor to ensure awareness should there be	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2D Reputational Harm			Y	N	4	5	4	5	5	92	EH	existing services. Excavation permit to be issued.	3	2	3	3	3	56	M			
		16.1I Unsafe access into/ out off excavations	16.2A Fatalites			Y	N	4	5	4	5	5	92	EH	16.3I Safe access to be provided e.g. more than one	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2B Injuries			Y	N	4	5	4	5	5	92	EH	stepladder should there be several employees working in	3	2	3	3	3	56	M			
														the excavation. Ladders to be within 6m from where										
														the employees are working. Ladders to be secured at										
		16.1J Nuisance dust	16.2B Injuries			Y	N	4	5	4	5	5	92	EH	16.3J Regular dust suppression to be done. Dust monitoring	3	2	3	3	3	56	M	Contractor	Ongoing
		16.2C Civil claims			Y	N	4	5	4	5	5	92	EH	to be done.	3	2	3	3	3	56	M			
		16.2D Reputational Harm			Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M			
		16.2E Acute and Chronic illnesses			Y	N	4	5	4	5	5	92	EH		3	2	3	3	3	56	M			

17. Scaffolding Work		17.1A Scaffold erected by an untrained, incompetent and unqualified individual		17.2A Fatalities		S Construction Regulation 16		Y N		5 5 5 5 5		100 EH		17.3A All scaffolding to be erected by a trained, qualified, appointed competent scaffold erector. Scaffolding to be inspected and supervised daily and after inclement weather by a competent appointed scaffold inspector-inspector to sign the green tag and enter the date of inspection. If scaffolding is unsafe, a red tag is to be posted. Scaffold to comply to SANS 10 085 Standard. Special scaffold to be approved and a design to be evident.		4 3 4 3 4		72 H		Contractor		Ongoing	
Scaffolding Work		17.2B Injuries	H SANS 10085	Y	N	5	5	5	5	5	5	100	EH	to be inspected and supervised daily and after inclement weather by a competent appointed scaffold inspector-inspector to sign the green tag and enter the date of inspection. If scaffolding is unsafe, a red tag is to be posted. Scaffold to comply to SANS 10 085 Standard. Special scaffold to be approved and a design to be evident.	4	3	4	3	4	72	H	OHS Agent	
		17.2C Temporary or permanent Physical damage		Y	N	5	5	5	5	5	5	100	EH		4	3	4	3	4	72	H	Consulting Engineer	
		17.2D Civil Claims		Y	N	5	5	5	5	5	5	100	EH		4	3	4	3	4	72	H		
		17.2E Reputational Harm		Y	N	5	5	5	5	5	5	100	EH		4	3	4	3	4	72	H		
17.1B Material falling from scaffolding		17.2A Fatalities		Y	N	4	5	4	5	5	92	EH	17.3B No loose redundant material on walkways.	4	3	4	3	4	72	H	Contractor	Ongoing	
		17.2B Injuries		Y	N	4	5	4	5	5	92	EH	Platforms to be fitted with toe boards and kick plates and trapdoors to be closed.	4	3	4	3	4	72	H	OHS Agent		
		17.2C Temporary or permanent Physical damage		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
17.1C Tools falling from scaffolding		17.2A Fatalities		Y	N	4	5	4	5	5	92	EH	17.3C All tools to be fitted with lanyards and to be worn around the wrists. If not possible, area underneath to be identified as a drop zone and spotter to be present to prevent unauthorised entrance underneath scaffolding.	4	3	4	3	4	72	H	Contractor	Ongoing	
		17.2B Injuries		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2C Temporary or permanent Physical damage		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
17.1D Scaffolding collapsing due to overloading and other factors		17.2A Fatalities		Y	N	4	5	4	5	5	92	EH	17.3D Ensure firm footing while climbing, standing and walking on scaffolding also refer to 17.3A above for additional comments.	4	3	4	3	4	72	H	Contractor	Ongoing	
		17.2B Injuries		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2C Temporary or permanent Physical damage		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
17.1E Untrained employee working on the scaffold		17.2A Fatalities		Y	N	4	5	4	5	5	92	EH	17.3E Employees working on scaffolding to be medically fit, competent trained for working at heights and to wear safety harness. If several employees are working in the same area on scaffolding, they are not to hook as to ensure safe and effective movement.	4	3	4	3	4	72	H	Contractor	Ongoing	
		17.2B Injuries		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2C Temporary or permanent Physical damage		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2D Civil Claims		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2E Reputational Harm		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
17.1F Employees falling from Scaffold		17.2A Fatalities		Y	N	4	5	4	5	5	92	EH	17.3F Employees to always ensure the scaffold has been declared fit safe to use before they begin work on the scaffold. When working on scaffold that has been declared safe, employees does not need to wear harnesses, except where knee & hip rails are missing when pouring concrete.	4	3	4	3	4	72	H	Contractor	Ongoing	
		17.2B Injuries		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2C Temporary or permanent Physical damage		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2D Civil Claims		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
		17.2E Reputational Harm		Y	N	4	5	4	5	5	92	EH		4	3	4	3	4	72	H			
18. Interfering with other contractors	Interfering with other contractors	18.1A Poor communication	18.2A Fatalities	S OHS Act Section 15	Y	N	4	3	4	4	4	76	H	18.3A Supervisors and team leaders to communicate with each other at the start of shift to ensure all are familiar with activities in immediate and surrounding areas. Regular forums/ meetings to be conducted and joint toolbox talks to be conducted.	2	2	3	2	2	44	M	Contractor	Ongoing
		18.2B Injuries	H General Safety Regulation OHS Act Section 8	Y	N	4	3	4	4	4	76	H		2	2	3	2	2	44	M	OHS Agent		
18.1B Employees outside their working area		18.2A Fatalities		Y	N	4	3	4	4	4	76	H	18.3B Employees to remain inside their respective workplaces or work areas.	2	2	3	2	2	44	M	Contractor	Ongoing	
		18.2B Injuries		Y	N	4	3	4	4	4	76	H		2	2	3	2	2	44	M			
18.1C Harm to contractor reputation if an incident occurs		18.2A Fatalities		Y	N	4	3	4	4	4	76	H	18.3C Should another contractors employee be injured, material, tool or equipment sustain damage the affected contractor is to be contacted and the contractor will attend to the matter. New Lessons learned to be shared.	2	2	3	2	2	44	M	Contractor	Ongoing	
		18.2B Injuries		Y	N	4	3	4	4	4	76	H		2	2	3	2	2	44	M			
19. Concrete works and formwork	Building foundation	19.1A Poor communication between personnel	19.2A Fatalities	S Construction Regulations	Y	N	5	4	5	4	5	92	EH	19.3A Supervisor to communicate risks of task at hand daily clearly to all before task commences. If supervisor has to leave area, he is to delegate his authority to another employee until he returns to the area. Employee handling holding discharge point of concrete truck to ensure effective communication with operator of pump.	2	2	3	2	2	44	M	Contractor	Ongoing
		19.2B Injuries	H General Machinery Regulations	Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M	OHS Agent		
		19.2C Property Damage	E Environmental Workplace	Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M	Consulting Engineer		
		19.2D Reputational Harm	Q Regulations	Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
		19.2E Sub-Standard workmanship	OHS Act Section 8	Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
19.1 Concrete truck driving unsafely		19.2A Fatalities		Y	N	5	4	5	4	5	92	EH	19.3B Concrete truck to be escorted into area by means of flagmen/ spotters. To adhere to speed limits as per Road traffic Act.	2	2	3	2	2	44	M	Contractor	Ongoing	
		19.2B Injuries		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
		19.2C Property Damage		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
19.1C Concrete truck driver untrained		19.2A Fatalities		Y	N	5	4	5	4	5	92	EH	19.3C Concrete truck driver to be licenced.	2	2	3	2	2	44	M	Contractor	Ongoing	
		19.2B Injuries		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
		19.2C Property Damage		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
19.1D Concrete truck unsafe		19.2A Fatalities		Y	N	5	4	5	4	5	92	EH	19.3D Concrete truck to be inspected daily before use. Daily checklist to be available upon request.	2	2	3	2	2	44	M	Contractor	Ongoing	
		19.2B Injuries		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
		19.2C Property Damage		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
19.1E Unsafe discharging of concrete		19.2A Fatalities		Y	N	5	4	5	4	5	92	EH	19.3E Employees not to stand within "line of fire "when discharging concrete.	2	2	3	2	2	44	M	Contractor	Ongoing	
		19.2B Injuries		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
		19.2C Property Damage		Y	N	5	4	5	4	5	92	EH		2	2	3	2	2	44	M			
19.1F Nip/pinch points		19.2A Fatalities		Y	N	5	4	5	4	5	92	EH	19.3F Employees to keep hands clear of pinch points when handling chute. Employees to wear PVC gloves. More than one employee to handle chute.	2	2	3	2	2	44	M	Contractor	Ongoing	
19.1G Concrete spills		19.2B Injuries		Y	N	5	4	5	4	5	92	EH	19.3G Employees to ensure that concrete is discharged and chute cleaned properly before the truck leaves the area.	2	2	3	2	2	44	M	Contractor	Ongoing	
		19.2C Property Damage		Y	N	5	4	5	4	5	92	EH	Concrete trucks to be washed at wash bays as agreed with.	2	2	3	2	2	44	M			

20. Emergency Preparedness	Emergency Preparedness Plan	20.1A Lack of emergency management plan	20.2A Fatalities	S	OHS Act Section 8	Y	N	4	5	4	5	5	92	EH	20.3A Comprehensive site specific emergency management plan to be drafted. Emergency drills to be conducted to test efficiency of emergency system.	2	2	2	2	2	3	44	M	Contractor	Ongoing
		20.2B Injuries	H	GSR 3	Y	N	4	5	4	5	5	92	EH	20.3A Comprehensive site specific emergency management plan to be drafted. Emergency drills to be conducted to test efficiency of emergency system.	2	2	2	2	2	3	44	M	OHS Agent		
		20.2C Property Damage		OHS General Safety Regulations	Y	N	4	5	4	5	5	92	EH	20.3A Comprehensive site specific emergency management plan to be drafted. Emergency drills to be conducted to test efficiency of emergency system.	2	2	2	2	2	3	44	M	Consulting Engineer		
		20.2D Reputational Harm			Y	N	4	5	4	5	5	92	EH	20.3A Comprehensive site specific emergency management plan to be drafted. Emergency drills to be conducted to test efficiency of emergency system.	2	2	2	2	2	3	44	M			
	20.1B Lack of knowledge	20.2A Fatalities			Y	N	4	5	4	5	5	92	EH	20.3B Emergency plan to be communicate to all employees.	2	2	2	2	2	3	44	M	Contractor	Ongoing	
		20.2B Injuries			Y	N	4	5	4	5	5	92	EH	20.3B Emergency plan to be communicate to all employees.	2	2	2	2	2	3	44	M			
		20.2C Property Damage			Y	N	4	5	4	5	5	92	EH	20.3B Emergency plan to be communicate to all employees.	2	2	2	2	2	3	44	M			
		20.2D Reputational Harm			Y	N	4	5	4	5	5	92	EH	20.3B Emergency plan to be communicate to all employees.	2	2	2	2	2	3	44	M			
	20.C Lack of signage	20.2A Fatalities			Y	N	4	5	4	5	5	92	EH	20.3C Signage to be in place showing all needed emergency equipment and evacuation routes. Training to be given to employees on the signage used on site.	2	2	2	2	2	3	44	M	Contractor	Ongoing	
		20.2B Injuries			Y	N	4	5	4	5	5	92	EH	20.3C Signage to be in place showing all needed emergency equipment and evacuation routes. Training to be given to employees on the signage used on site.	2	2	2	2	2	3	44	M			
		20.2C Property Damage			Y	N	4	5	4	5	5	92	EH	20.3C Signage to be in place showing all needed emergency equipment and evacuation routes. Training to be given to employees on the signage used on site.	2	2	2	2	2	3	44	M			
		20.2D Reputational Harm			Y	N	4	5	4	5	5	92	EH	20.3C Signage to be in place showing all needed emergency equipment and evacuation routes. Training to be given to employees on the signage used on site.	2	2	2	2	2	3	44	M			
21. Electrical Works	Electrical Installations	21.1A Untrained employees	21.2A Fatalities	S	Electrical Installation	Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries	H	Regulations	Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	4	76	H	OHS Agent		
		21.2C Electrical Shock and Burns		Construction Regulations 24	Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	4	76	H	Consulting Engineer		
		21.2D Property Damage			Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	4	76	H			
		21.2E Reputational Harm			Y	N	5	5	5	4	5	96	EH	21.3A Only trained and competent employees to carry out electrical installations.	4	3	4	4	4	4	76	H			
		21.1B Sub standard equipment	21.2A Fatalities			Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries			Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	4	76	H			
		21.2C Electrical Shock and Burns			Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	4	76	H			
		21.2D Property Damage			Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	4	76	H			
		21.2E Reputational Harm			Y	N	5	5	5	4	5	96	EH	21.3B All equipment to be SABS approved and calibration certificates to be present. All equipment to be checked before use and findings logged in a register.	4	3	4	4	4	4	76	H			
	21.1C Unsafe conditions	21.2A Fatalities			Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Ins register to show that all the potential risks associated with the task of	4	3	4	4	4	4	H	H	Contractor	Ongoing	
		21.2B Injuries			Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Ins register to show that all the potential risks associated with the task of	4	3	4	4	4	4	H	H			
		21.2C Electrical Shock and Burns			Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Ins register to show that all the potential risks associated with the task of	4	3	4	4	4	4	H	H			
		21.2D Property Damage			Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Ins register to show that all the potential risks associated with the task of	4	3	4	4	4	4	H	H			
		21.2E Reputational Harm			Y	N	5	5	5	4	5	96	EH	21.3C Daily safety task instruction to be done on a daily basis before work starts. All employees must sign the Daily Safety Task Ins register to show that all the potential risks associated with the task of	4	3	4	4	4	4	H	H			
		21.1D No lock out procedure	21.2A Fatalities			Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	4	76	H	Contractor	Ongoing
		21.2B Injuries			Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	4	76	H			
		21.2C Electrical Shock and Burns			Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	4	76	H			
		21.2D Property Damage			Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	4	76	H			
		21.2E Reputational Harm			Y	N	5	5	5	4	5	96	EH	21.3D Site specific lock out procedure to be drafted and implemented.	4	3	4	4	4	4	76	H			
	21.1E No lock out done	21.2A Fatalities			Y	N	5	5	5	4	5	96	EH	21.3E All energized source to be locked out following the lock out procedure before work commences.	4	3	4	4	4	4	76	H	Contractor	Ongoing	
		21.2B Injuries			Y	N	5	5	5	4	5	96	EH	21.3E All energized source to be locked out following the lock out procedure before work commences.	4	3	4	4	4	4	76	H			
		21.2C Electrical Shock and Burns			Y	N	5	5	5	4	5	96	EH	21.3E All energized source to be locked out following the lock out procedure before work commences.	4	3	4	4	4	4	76	H			
		21.2D Property Damage			Y	N	5	5	5	4	5	96	EH	21.3E All energized source to be locked out following the lock out procedure before work commences.	4	3	4	4	4	4	76	H			
21.1F Incorrect design	21.2A Fatalities			Y	N	5	5	5	4	5	96	EH	21.3F Only newest revision drawings to be used. All installations to have certificates of compliance.	4	3	4	4	4	4	76	H	Contractor	Ongoing		
	21.2B Injuries			Y	N	5	5	5	4	5	96	EH	21.3F Only newest revision drawings to be used. All installations to have certificates of compliance.	4	3	4	4	4	4	76	H				
	21.2C Electrical Shock and Burns			Y	N	5	5	5	4	5	96	EH	21.3F Only newest revision drawings to be used. All installations to have certificates of compliance.	4	3	4	4	4	4	76	H				
	21.2E Poor Quality Product			Y	N	5	5	5	4	5	96	EH	21.3F Only newest revision drawings to be used. All installations to have certificates of compliance.	4	3	4	4	4	4	76	H				
22. Hand Tools	Hand Tools Usage	22.1A Unsafe hand tools	22.2A Injuries	S	OHS Act Section 8	Y	N	4	4	4	4	5	84	EH	22.3A All hand tools to be inspected before use. All unsafe hand tools to be send for repairs or scraped.	2	3	2	2	2	2	44	M	Contractor	Ongoing
		22.2B Property Damage	H	Construction Regulations	Y	N	4	4	4	4	5	84	EH	22.3A All hand tools to be inspected before use. All unsafe hand tools to be send for repairs or scraped.	2	3	2	2	2	2	44	M	OHS Agent		
		22.2C Temporary or Permanent Disability			Y	N	4	4	4	4	5	84	EH	22.3A All hand tools to be inspected before use. All unsafe hand tools to be send for repairs or scraped.	2	3	2	2	2	2	44	M			
		22.2D Reputational Harm			Y	N	4	4	4	4	5	84	EH	22.3A All hand tools to be inspected before use. All unsafe hand tools to be send for repairs or scraped.	2	3	2	2	2	2	44	M			
	22.1B Incorrect use	22.2A Injuries			Y	N	4	4	4	4	5	84	EH	22.3B Hand tools only to be used for their designed purpose.	2	3	2	2	2	2	44	M	Contractor	Ongoing	
		22.2B Property Damage			Y	N	4	4	4	4	5	84	EH	22.3B Hand tools only to be used for their designed purpose.	2	3	2	2	2	2	44	M			
		22.2C Temporary or Permanent Disability			Y	N	4	4	4	4	5	84	EH	22.3B Hand tools only to be used for their designed purpose.	2	3	2	2	2	2	44	M			
		22.2D Reputational Harm			Y	N	4	4	4	4	5	84	EH	22.3B Hand tools only to be used for their designed purpose.	2	3	2	2	2	2	44	M			
	22.1C Home made tools	22.2A Injuries			Y	N	4	4	4	4	5	84	EH	22.3C No modified or home made tools to be used.	2	3	2	2	2	2	44	M	Contractor	Ongoing	
		22.2B Property Damage			Y	N	4	4	4	4	5	84	EH	22.3C No modified or home made tools to be used.	2	3	2	2	2	2	44	M			
		22.2C Temporary or Permanent Disability			Y	N	4	4	4	4	5	84	EH	22.3C No modified or home made tools to be used.	2	3	2	2	2	2	44	M			
		22.2D Reputational Harm			Y	N	4	4	4	4	5	84	EH	22.3C No modified or home made tools to be used.	2	3	2	2	2	2	44	M			

23. Use of electrical equipment	General electrical work	23.1A Unsafe equipment	23.2A Injuries	S	OHS Act 85 of 1993	Y	N	5	4	5	5	5	96	EH	23.3A Equipment to be inspected monthly by a competent person. Pre use inspection to be done each time before use. Defective equipment to be send for repairs and not to be used.	4	3	3	3	4	68	H	Contractor	Ongoing	
			23.2B Fatalities	H	OHS Act CR 24	Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H	OHS Agent		
			23.2C Electric Shock and Burns		Electrical Installation Regulations	Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H	Consulting Engineer		
			23.2D Property Damage		Electrical Machinery Regulations	Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2E Tripping and Falling			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2F Third party claims			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2G Temp. or Perm. Diasability			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.1B Improper use	23.2A Injuries			Y	N	5	4	5	5	5	96	EH	23.3B Equipment only to be used for the designed purpose(s).	4	3	3	3	4	68	H	Contractor	Ongoing
				23.2B Fatalities			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
				23.2C Electric Shock and Burns			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
				23.2D Property Damage			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
				23.2G Temp. or Perm. Diasability			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
			23.1C Electrical equipment being used in wet conditions	23.2A Injuries			Y	N	5	4	5	5	5	96	EH	23.3C Electrical equipment not to be used in wet conditions.	4	3	3	3	4	68	H	Contractor	Ongoing
				23.2B Fatalities			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
				23.2C Electric Shock and Burns			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
				23.2D Property Damage			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H		
		23.1D Electrical equipment not routed safely	23.2A Injuries			Y	N	5	4	5	5	5	96	EH	23.3D All cables to be routed safely away from walkways. All cables to be kept together when routed.	4	3	3	3	4	68	H	Contractor	Ongoing	
			23.2B Fatalities			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2C Electric Shock and Burns			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2D Property Damage			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2G Temp. or Perm. Diasability			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
		23.1E Untrained operator	23.2A Injuries			Y	N	5	4	5	5	5	96	EH	23.3E Operators of equipment to be trained in the operations and inspections and monitoring.	4	3	3	3	4	68	H	Contractor	Ongoing	
			23.2B Fatalities			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2C Electric Shock and Burns			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2D Property Damage			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
			23.2G Temp. or Perm. Diasability			Y	N	5	4	5	5	5	96	EH		4	3	3	3	4	68	H			
24. Mobile plant	Driving	24.1A Unsafe plant	24.2A Injuries	S	Driven machinery regulations	Y	N	5	4	4	5	5	92	EH	24.3A All plant to be checked on a daily basis before work commenc	3	3	3	3	3	60	M	Contractor	Ongoing	
			24.2B Fatalities	H	OHS Act CR 20 and 23	Y	N	5	4	4	5	5	92	EH	a competent, trained and qualified operator, and findings to be loggex in a register.	3	3	3	3	3	60	M	OHS Agent		
			24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
			24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
		Operating	24.1B Improper use	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3B Plant only to be used for the designed purpose.	3	3	3	3	3	60	M	Contractor	Ongoing
			24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
			24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
			24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M			
			24.1C No valid medical certificate	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3C All operators to have valid medical certificates. Medical Certifi to be evident on-site and to be available on request.	3	3	3	3	3	60	M	Contractor	Ongoing
				24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M		
				24.2C Third party claims			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M		
				24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M		
			25.1D No plant management plan	24.2A Injuries			Y	N	5	4	4	5	5	92	EH	24.3D Plant management plan to be drafted to indicate service intervals and travel routes.	3	3	3	3	3	60	M	Contractor	Ongoing
				24.2B Fatalities			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M		
				24.2D Reputational Harm			Y	N	5	4	4	5	5	92	EH		3	3	3	3	3	60	M		
		25.1E Untrained operator	24.2A Injuries			Y	N	4	5	5	5	5	96	EH	24.3E All operators to be trained and competent.	3	3	3	3	3	60	M	Contractor	Ongoing	
			24.2B Fatalities			Y	N	4	5	5	5	5	96	EH	Competency certificates to be evident on request.	3	3	3	3	3	60	M			
			24.2C Third party claims			Y	N	4	5	5	5	5	96	EH		3	3	3	3	3	60	M			
			24.2D Reputational Harm			Y	N	4	5	5	5	5	96	EH		3	3	3	3	3	60	M			

C4.3 Drawings
Eikenhoff and Northern Farms



TYPICAL CRUSHED STONE SECTION
SCALE 1:20

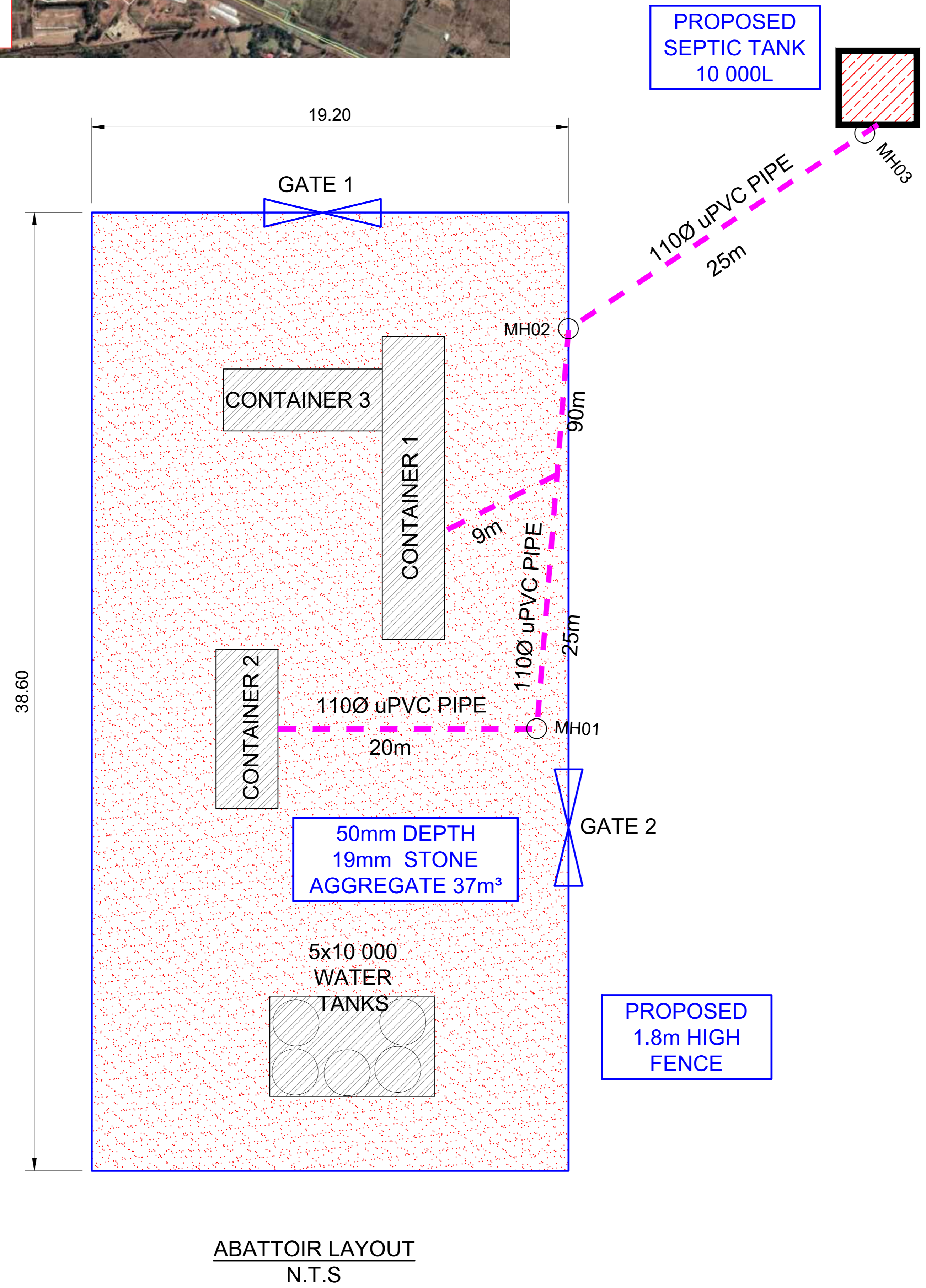
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REV DATE REVISION DESCRIPTION BY CHKD

A	2020/10/14	ISSUED FOR INFORMATION	SC	LF
B	2021/04/19	ISSUED FOR INFORMATION	SC	LF

ASSOCIATED DWG No. DRAWING DESCRIPTION

- NOTES**
1. ALL IMPORTED FILL TO CLASSIFY AS G7 OR BETTER
 2. ALL LEVELS SHOWN ARE BULK EARTHWORKS LEVELS UNLESS OTHERWISE AGREED
 3. BATTER SLOPES TO BE 1:1 UNLESS OTHERWISE AGREED
 4. ALL FILL TO BE COMPACTED TO MINIMUM 93% MOD AASHTO UNLESS OTHERWISE NOTED
 5. SETTING OUT DIMENSIONS TO BE CONFIRMED ON SITE IN ACCORDANCE WITH OSH ACT. 1993 INFORMATION REGULATIONS 2003
 6. CONTRACTOR TO ENSURE THAT ALL SITE ACTIVITIES ARE IN ACCORDANCE WITH THE REQUIREMENTS OF SABS 12000
 7. ALL WORKS TO COMPLY WITH THE REQUIREMENTS OF SABS 12000 DEGREE OF ACCURACY II
 8. TESTING
 - a) ONE MODIFIED AASHTO MAXIMUM DENSITY DETERMINATION TO BE CARRIED OUT FOR EACH SET OF TESTS ON HOMOGENEOUS MATERIAL
 - b) SETS OF DENSITY TEST TO COMPRISE:
 - ORDINARY FILL / SUBGRADE 4 TESTS PER 2000m² SELECTED LAYERS 4 TESTS PER 1000m² SUB - BASE 4 TESTS PER 1000m²
 - c) ACCEPTANCE CRITERIA REFER TO TABLE 2 SABS 12000M
 9. NOTE: 150mm TOPSOIL TO BE REMOVED IN AREAS WITH NO PREMIX AND FOR AREAS WITH PREMIX. PREMIX TO BE REMOVED AND BASE MATERIAL TO RIPPED AND RECOMPACTED TO 93% MOD. AASHTO



FOR TENDER

ISSUED FOR INFORMATION

client

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project title

EIKEHOF FARM

drawing title

CHICKEN ABATTOIR FENCING

REF. NO.	N/A	designed	LF
scale	AS SHOWN	drawn	SC
date	APRIL 2021	checked	LF
type number	TENDER	PAPER SIZE A3	
drawing number	2000140-C-150	REVISION A	

GENERAL 1.

- 1.1 ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SANS SPECIFICATIONS.
- 1.2 ALL DIMENSIONS ARE IN MILLIMETERS. (UNLESS OTHERWISE SPECIFIED)
- 1.3 DO NOT SCALE FROM THESE DRAWINGS. ALL DIMENSIONS MUST BE CHECKED AND APPROVED 1.4 ON SITE. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE
- 1.5 WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION, 2005 AND THE STANDARD CTMM DETAIL DRAWINGS
- 1.6 THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTS DRAWINGS (IF APPLICABLE)

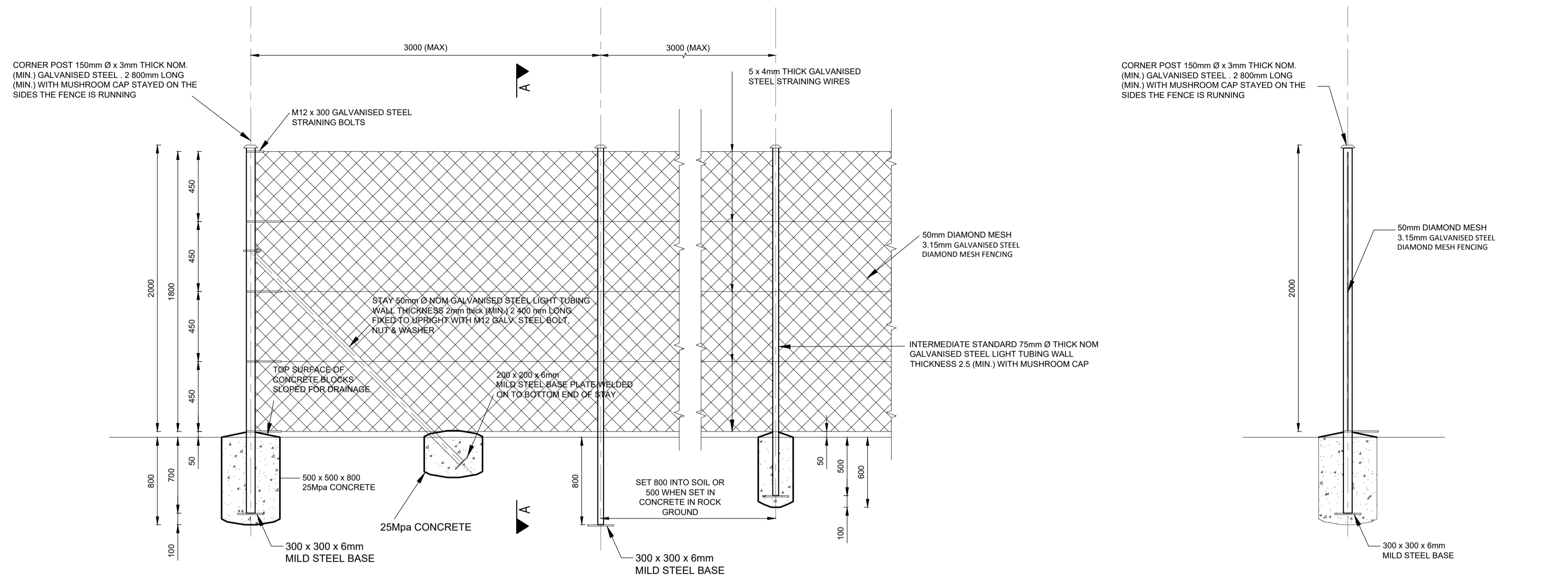
2. CONCRETE

- 2.1 REINFORCED CONCRETE WORK SHALL BE IN STRICT ACCORDANCE WITH SECTIONS 702, 703 AND 704 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005. ALL EXCAVATIONS FOR BASES AND FOOTINGS MUST
- 2.2 BE INSPECTED AND APPROVED IN WRITING BY THE ENGINEER BEFORE CONCRETE IS PLACED.
- 2.3 REINFORCEMENT AND FORMWORK MUST BE INSPECTED AND APPROVED IN WRITING BY THE ENGINEER BEFORE CONCRETE IS PLACED.

3. STEELWORK

- 3.1 STRUCTURAL STEELWORK SHALL BE IN STRICT ACCORDANCE WITH SECTION 809 OF THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005
- 3.2 OTHERWISE INDICATED OR SPECIFIED.
- 3.3 COLD FORMED SECTIONS SHALL BE MADE FROM COMMERCIAL QUALITY STEEL UNLESS OTHERWISE SPECIFIED.
- 3.4 HOLDING DOWN BOLTS SHALL BE OF THE GRADE SPECIFIED ON THE DRAWINGS.
- 3.5 PAINTING OF STRUCTURAL STEELWORK SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF SECTION 806 OF THE STANDARD SPECIFICATIONS. NOTE: THE RATES TENDERED FOR STRUCTURAL STEELWORK SHALL BE DEEMED TO INCLUDE FOR PAINTING AS SPECIFIED IN SECTION 806 OF THE STANDARD SPECIFICATIONS, FOR MUNICIPAL CIVIL ENGINEERING WORKS, 3rd EDITION, 2005. "W" AND "H" INDICATE THE WIDTH OF THE GATE
- 3.6 AND HEIGHT OF THE PALISADE FENCE RESPECTIVELY. VALUES FOR "W" AND "H" WILL BE SHOWN ON THE DETAIL DRAWINGS, IN THE SCHEDULE OF QUANTITIES OR INDICATED BY THE ENGINEER. THE MAIN POLES SHOULD BE 150MM Ø X 3MM THICK POLES 2.8 M LONG PLANTED AT LEAST 800 MM DEEP WITH CONCRETE STRENGTH OF AT LEAST 25 MPA. THE POLES MUST BE MUSHROOM CAPED BEFORE HOT DIP GALVANIZING AND PREDRILLED FOR 4 HORIZONTAL FIXING WIRES. THIS MAIN POLES MUST BE PLANTED NOT MORE THAN 20 M APART AND BE STAYED ON BOTH SIDES WITH 50 MM Ø POLES AND 2.8 MM THICK GALVANISED STAY 2.4M LONG WITH TOP END FLATTENED FOR A LENGTH OF 180MM HOLED FOR BOLTED TO POST WITH AND INCLUDING M12 GALVANISED MILD STEEL BOLTS WITH NUTS AND WASHERS INCLUDING DRILLING HOLES THROUGH POST AND WITH 200 X 200 X 6MM MILD STEEL BASE PLATE WELDED ONTO BOTTOM END OF STAY.
- 3.7 THE DROPPERS ARE 75 MM Ø WITH 2.5 MM THICK AND MUSHROOM CAP WELDED ONTO TOP AND WITH 200 X 200 X 6MM MILD STEEL BASE PLATE WELDED ONTO BOTTOM END AND DRILLED FOR 4 STRANDS. POLES TO BE PLANTED 3 M APART IN-BETWEEN MAIN ANCHOR POLES
- ALL POLES NOT TO HAVE OFFSETS FOR RAZOR WIRE TOPS.
- WIRE MESH TO BE 3.15 MM WIRE WITH 50 X 50 MM HOLES AND PRE GALVANISED BEFORE MESH IS MANUFACTURED. FIXING WIRES TO BE 3.15 MM HARDENED WIRE GALVANIZED AND TYING WIRE TO BE 2MM
- 3.8 ALL DRILL HOLES IN POLES TO HAVE ALL THEIR BURRS GRINDED OFF PRIOR TO GALVANIZING. ALL EYE BOLTS AND FASTENERS PERTAINING TO THE FENCE MUST ALL BE HOT DIP GALVANIZED.
- 3.9 ALL HOT DIP GALVANISING MUST BE TO SANS 121 (ISO1461). ALL HEAVY DUTY MESH WIRE MUST HAVE A MINIMUM OF 40 MICRONS HEAVY DUTY GALVANIZING.

FOR TENDER

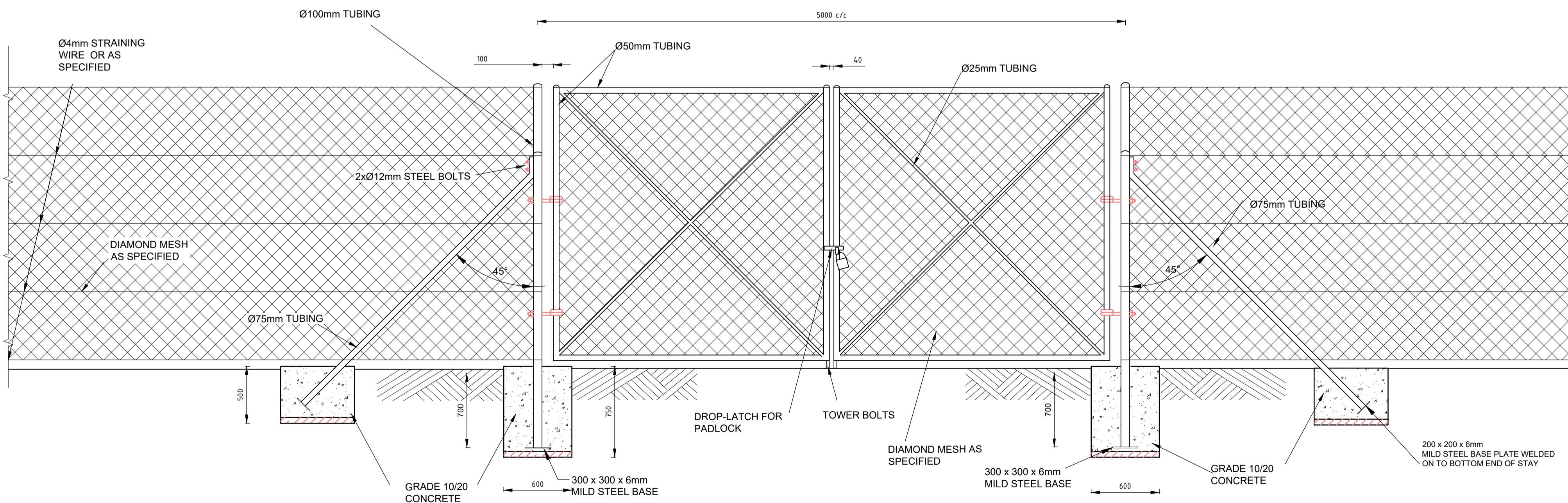


DETAILS OF SECURITY FENCE

SCALE 1 : 25

SECTION A - A

SCALE 1 : 25



DOUBLE LEAF GATE

SCALE 1:25

EIKEHOF FARM

DIAMOND MESH FENCE AND GATE FENCING AND POLE FIXING DETAILS

REF. NO.	N/A	designed	LF
scale	AS SHOWN	drawn	SC
date	APRIL 2021	checked	LF
type number	TENDER	PAPER SIZE	
drawing number	2000140-C-155	A1	
		REVISION	
		B	

THE MASTER HELD AT KGOSIHADI OFFICE BEARS THE ORIGINAL SIGNATURE OF APPROVAL

- NOTES**
1. READ THIS DRAWING IN CONJUNCTION WITH THE ARCHITECT'S DRAWING AND REFER DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
 2. USE THE STATED OR CALCULATED DIMENSIONS ONLY.
 3. CONCRETE GRADE:
 - a- BLINDING- 10MPa
 - b- BASES, COLUMN, BEAMS, SLABS -30MPa
 - c- MAXIMUM AGGREGATE SIZE- 19mm
 4. FOUNDATION DEPTHS:
 - STRIP FOOTING- 1 000mm
 - PAD FOOTING- 1 200mm
 Actual depth to be determined on site by the engineer.
 5. COVER TO REINFORCEMENT
 - FOUNDATIONS- 50mm
 - BEAMS- 30mm
 6. ALLOWABLE BEARING PRESSURE- 150MPa
 7. BRICKWORK
 - All load bearing brickwork to be 14MPa
 - Water absorption to be less than 10% and irreversible moisture expansion to be 0.05% max
 - The minimum crushing strength of mortar shall be as for class II mortar in accordance with table 1 SABS 0164 part 1-1980
 - Brickwork shall be reinforced with an approved brick force, every layer for the first 3 layers above any horizontal concrete surface, every layer for the first 3 layers below any horizontal concrete surface and every 4th layer in between min lap 200mm
 - All brickwork shown is load bearing, unless otherwise indicated.
 - see architectural drawings for general layout of brickwork.
 - All brick anchors, wall ties and straps shall be hot dipped galvanised
 - V joints are to be made in plasterwork where rickwork and concrete join. Seal with 12mmwide jointex in top 10mm all sides
 - Non load bearing brickwork may not be built closer than 20mm from the soft and sides of beams and slabs unless otherwise shown.
 - Bricks to be wetted before use
 - Wall joints must be repeated in all tiled finishes
 - Brickwork to be tied to the concrete columns with 30x3 galvanised hoop iron ties at every 4th course.
 - Fix the ties to the columns with the hit shot studs each. Min horizontal length 300mm

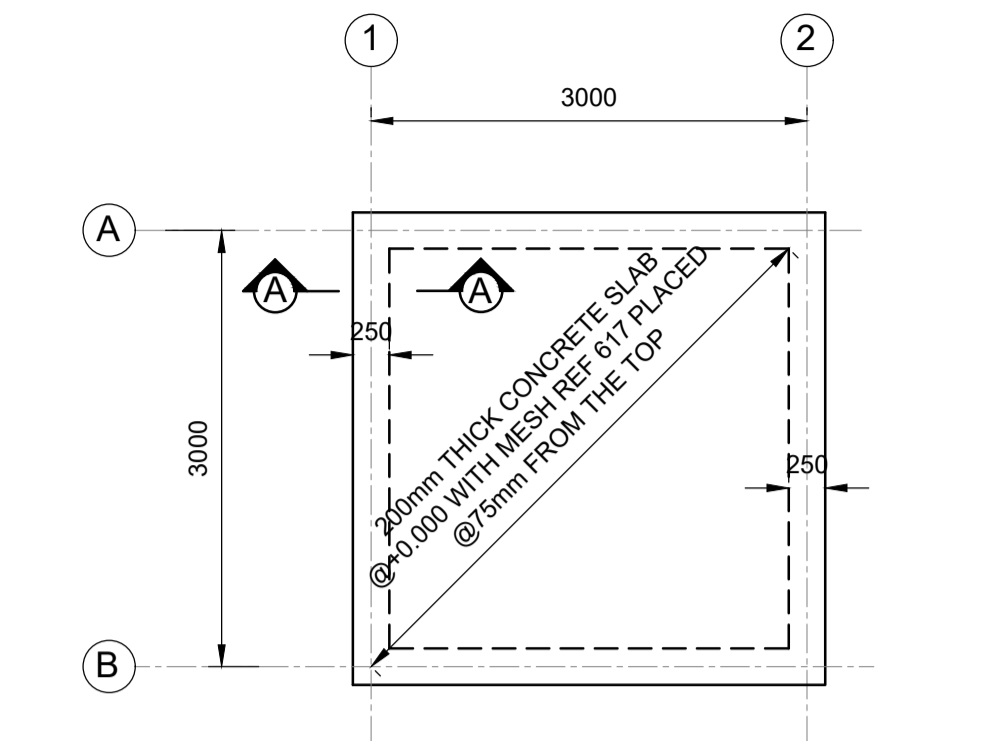
IF IN DOUBT ASK

REV	DATE	REVISION DESCRIPTION	BY	CHKD
A	2021/02/23	ISSUED FOR INFORMATION	SC	LF
B	2021/04/19	UPDATED FROM A BRICK TO CONCRETE WALL	SC	LF
C	2021/04/20	CONCRETE PLINTH ADDED	SC	LF
D	2021/04/20	SECOND CONCRETE PLINTH ADDED	SC	LF

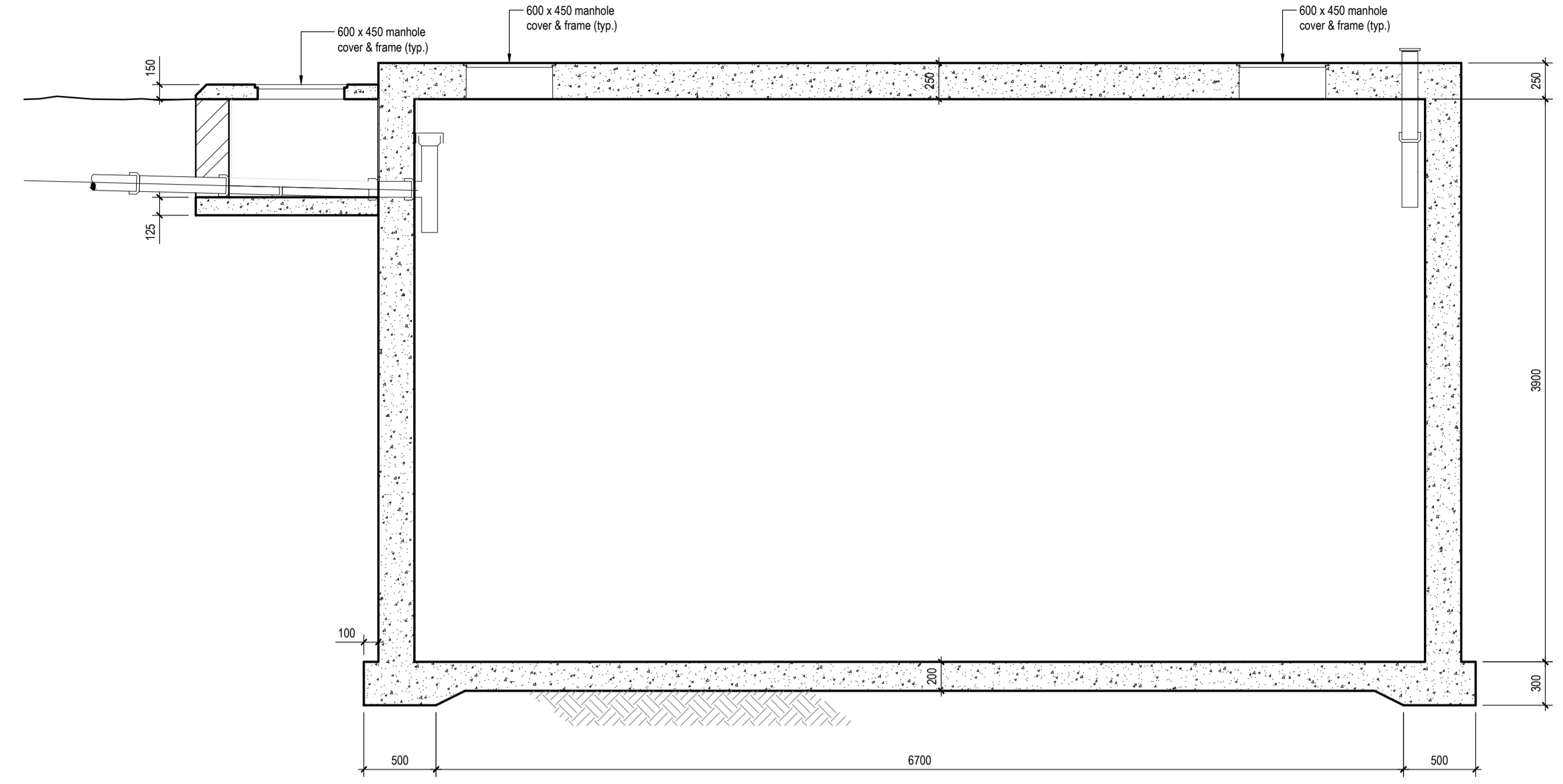
ASSOCIATED DWG No.	DRAWING DESCRIPTION

- NOTES (GENERAL)**
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND CONTRACT SPECIFICATIONS. ANY DISCREPANCIES TO BE BROUGHT TO ENGINEER'S ATTENTION PRIOR TO IMPLEMENTATION OF ANY WORK.
 2. CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE.
 3. CONTRACTOR TO VERIFY ALL LEVELS AND DIMENSIONS ON SITE.
 4. SCALING OF DRAWINGS IS NOT PERMITTED, FIGURED DIMENSIONS ONLY TO BE USED.
 5. LARGE SCALE DETAILS TO BE USED WHERE AVAILABLE.
 6. CONTRACTOR TO IDENTIFY AND EXPOSE ALL UNDER GROUND SERVICES ON SITE WHERE RELEVANT.
 7. CONSTRUCTION IS TO BE IN ACCORDANCE WITH ALL RELEVANT DRAWINGS, CONTRACT SPECIFICATIONS OR SABS 1200.
 8. SHOULD THE ENGINEER BE REQUIRED ON SITE, 24 HOURS NOTICE IS REQUESTED.

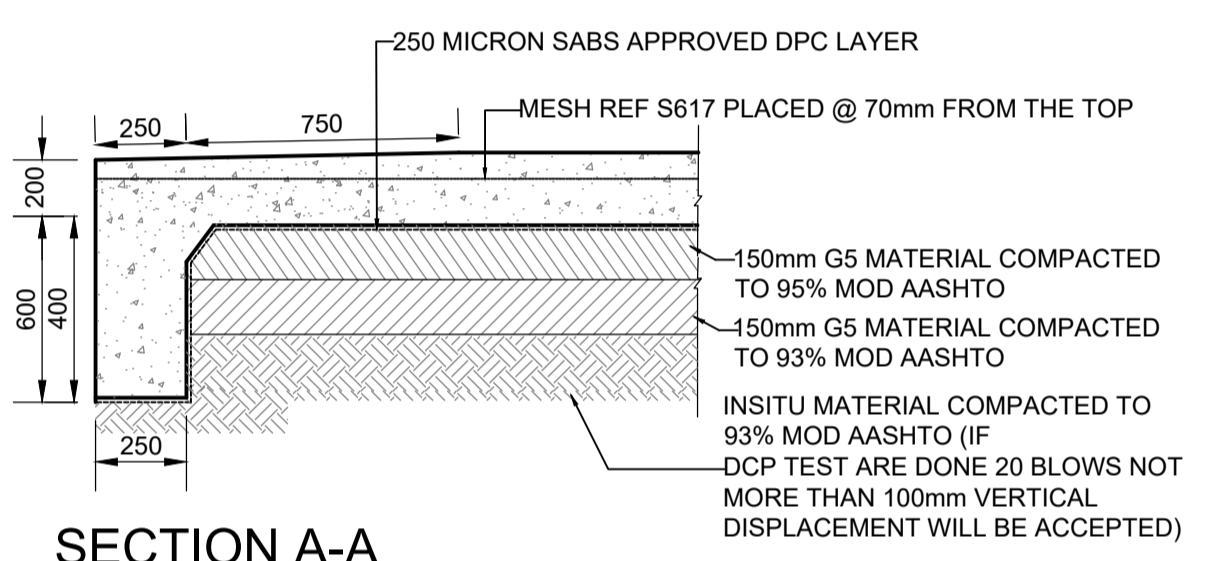
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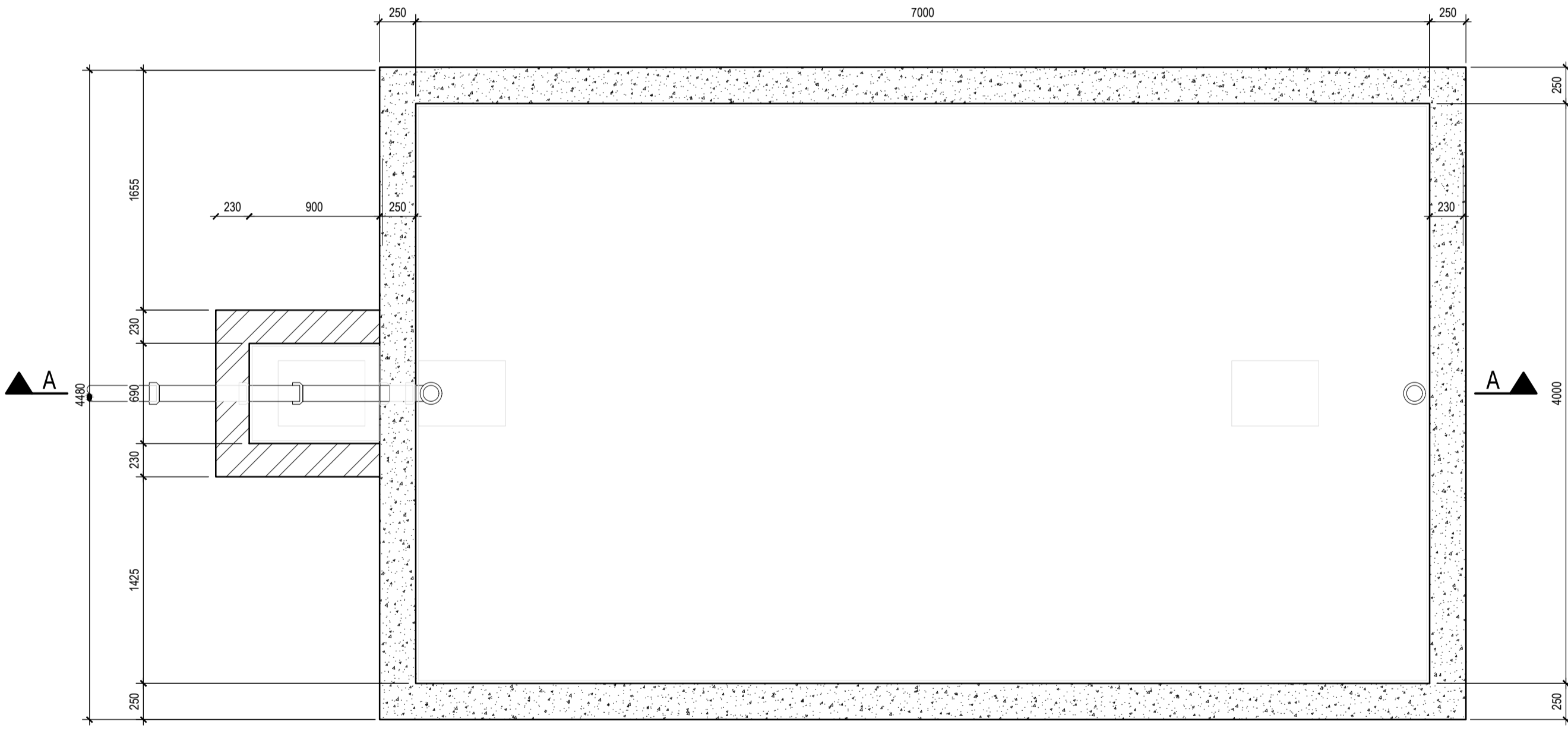
PLINTH GROUND BEAM SETTING-OUT LAYOUT
SCALE 1:100



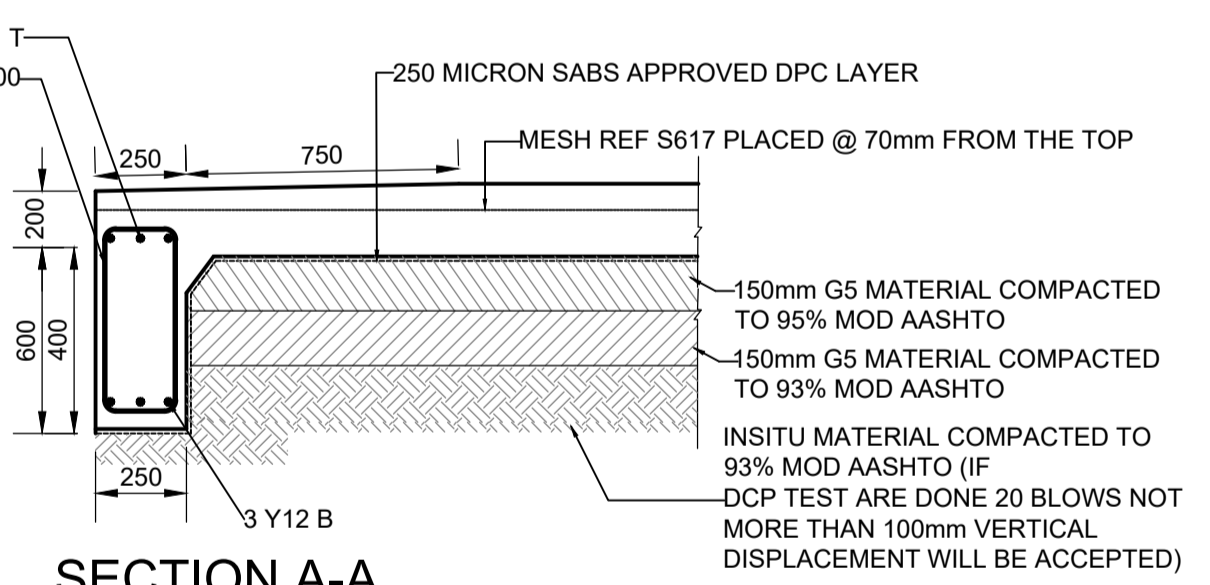
SECTION A-A



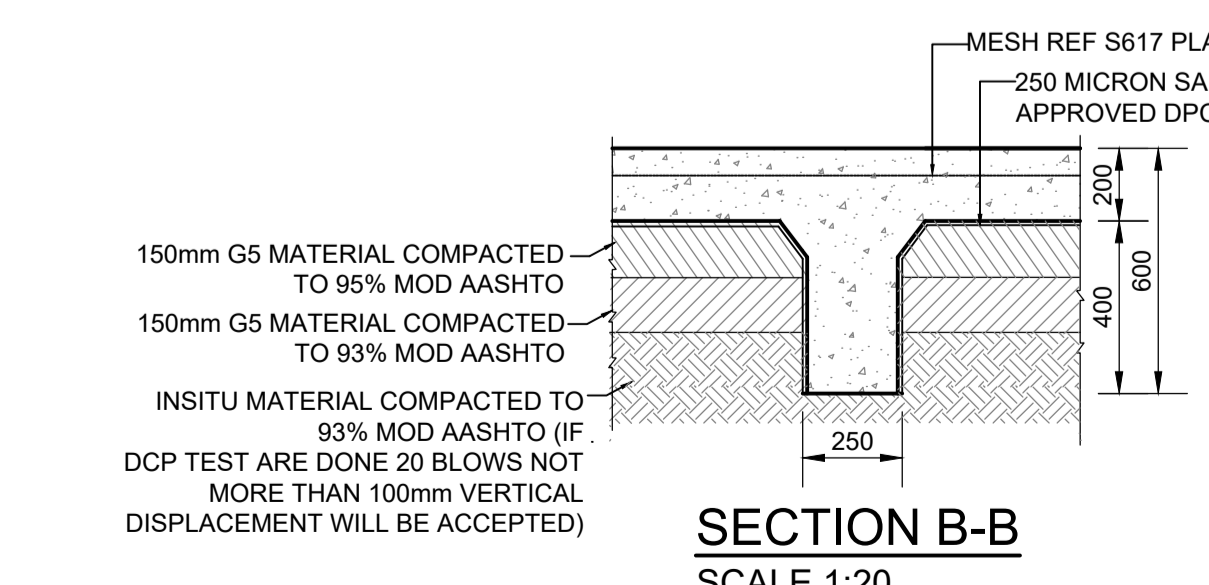
SECTION A-A
SCALE 1:20



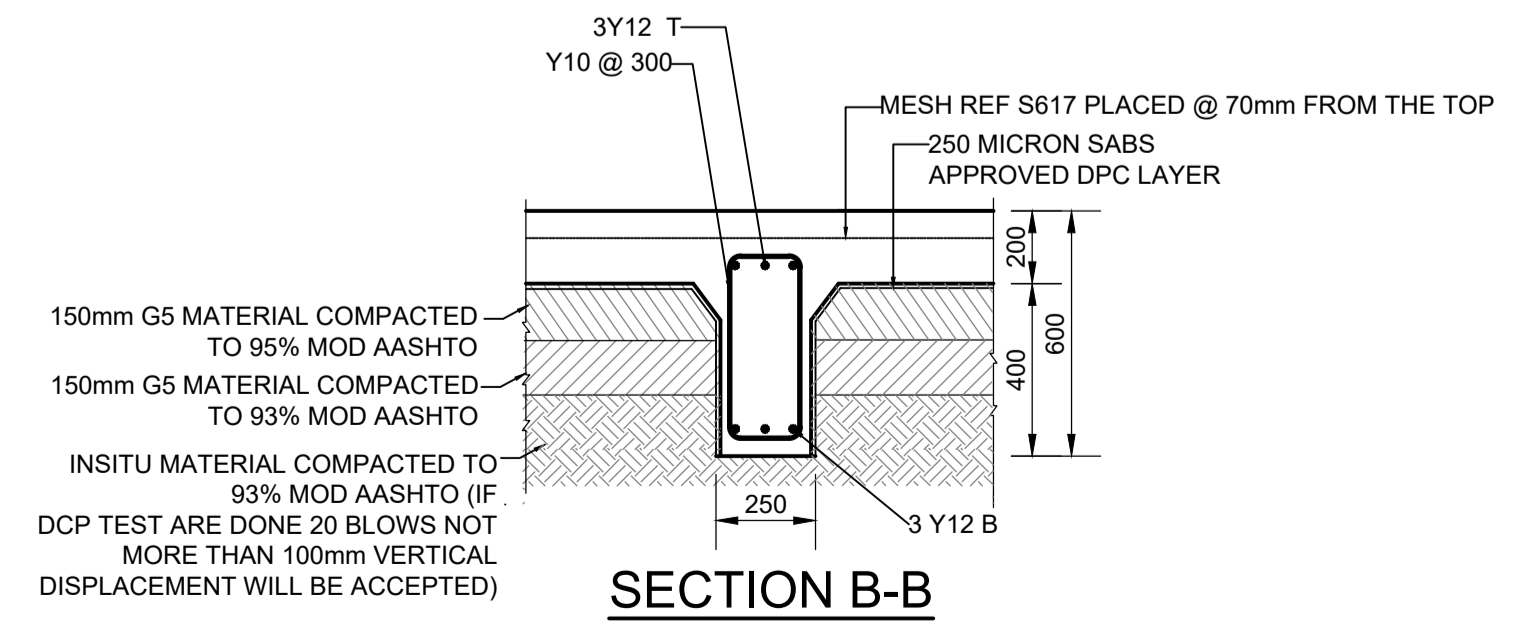
SEPTIC TANK DETAILS



SECTION A-A
SCALE 1:20

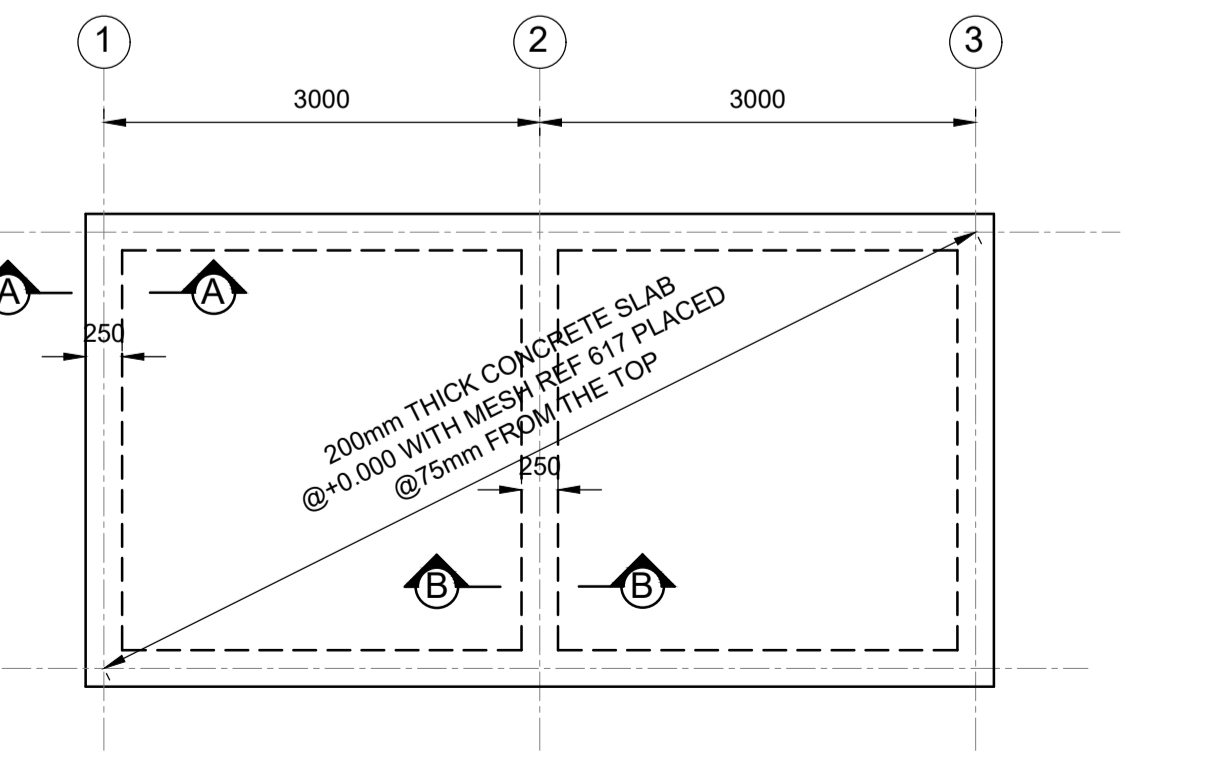


SECTION B-B
SCALE 1:20



SECTION B-B
SCALE 1:20

THE MASTER HELD AT KGOSIHADI OFFICE BEARS THE ORIGINAL SIGNATURE OF APPROVAL



PLINTH GROUND BEAM SETTING-OUT LAYOUT
SCALE 1:100

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project title

EIKEHOF FARM

drawing title

SEPTIC TANK AND PLINTH DETAILS

REF. NO.	N/A	designed	LF
scale	AS SHOWN	drawn	SC
date	APRIL 2021	checked	LF
type number	TENDER	PAPER SIZE	
drawing number	2000140-C-160	A1	
		REVISION	
		D	

C4.5 Geohydrologist Report
Northern Farms

**REPORT FOR GEOHYDROLOGICAL ASSESSMENTS AT BETRAMS,
FLEURNHOF AND NORTHERN EMPOWERMENT ZONES**

KGOSIHADI CONSULTING ENGINEERS

GAUTENG PROVINCE

APRIL 2021

PRJ_R_1/Rev2

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REPORT FOR GEOHYDROLOGICAL ASSESSMENTS AT BETRAMS, FLEURNHOF AND NORTHERN EMPOWERMENT ZONES

KGOSIHADI CONSULTING ENGINEERS GAUTENG PROVINCE

Conducted on behalf of:

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Mapoti Mahlangu

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List of Abbreviations

CDT	Constant Drawdown Test
JDA	Johannesburg Development Agency
DWS	Department of water and sanitation
Hr	Hours
FC	Flow Characteristics
M	Metres
Mbgl	Meters Below Ground Level
PI	Pump Inlet
SANAS	South African National Standard
SDT	Step Drawdown Test
SWL	Static Water Level
T	Transmittivity
WL	Water Level

TABLE OF CONTENTS

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1 INTRODUCTION

Kgosihadi Consulting Engineers (PTY) LTD (herein referred to as Kgosihadi) has been appointed by Johannesburg Development Agency (JDA) for siting of two new boreholes and testing of one existing borehole at Betrams Multi-purpose centre within the city of Johannesburg.

Kgosihadi Consulting Engineers appointed Kimopax (Pty) Ltd (herein referred to as Kimopax) to conduct geohydrological assessments that included geophysical surveys for siting of new water supply boreholes at Fleurhof and Northern Empowerment zones, and borehole pumping test of one existing borehole located at Betrams multipurpose centre with the aim of give substantiality abstraction yield for the centre.

2 PROJECT OBJECTIVES

The main objective was to conduct groundwater source investigations that includes borehole and aquifer pumping tests at Betrams multipurpose centre aimed at verifying the safe yield of the existing borehole and conduct ground geophysical surveys at Fleurhof and Northern Empowerment Zones to determine potential drilling positions.

3 SCOPE OF WORK

The scope of work for this groundwater source development included the following:

- a) Desktop study which consists of collating of existing information, assessment of satellite images and lineaments to identify potential target areas for groundwater exploration;
- b) Geophysical investigations using the magnetic and electromagnetic techniques (identification of target zones for exploration drilling);
- c) Yield and water quality testing of one borehole at Betrams multipurpose centre;
- d) Assess sustainability (quality and quantity) of water supply on the one successfully tested boreholes; and
- e) Compilation of investigation technical report.

4 DESCRIPTION OF THE STUDY AREA

4.1 Locality

The study area consists of three location being:

- a) Betrams multipurpose centre situated along the Betrams road in the city of Johannesburg, Johannesburg Metropolitan Municipality in Gauteng Province (Figure 1)
- b) Fleurhof Empowerment zone is at Chris Hani road, Diepkloof in the Eastern Border of Soweto, Johannesburg Metropolitan Municipality in Gauteng Province (Figure 2); and
- c) Northern Empowerment zone based within the boundaries of Dieplsoodt Nature Reserve on the doorstep of Johannesburg. (Figure 3)

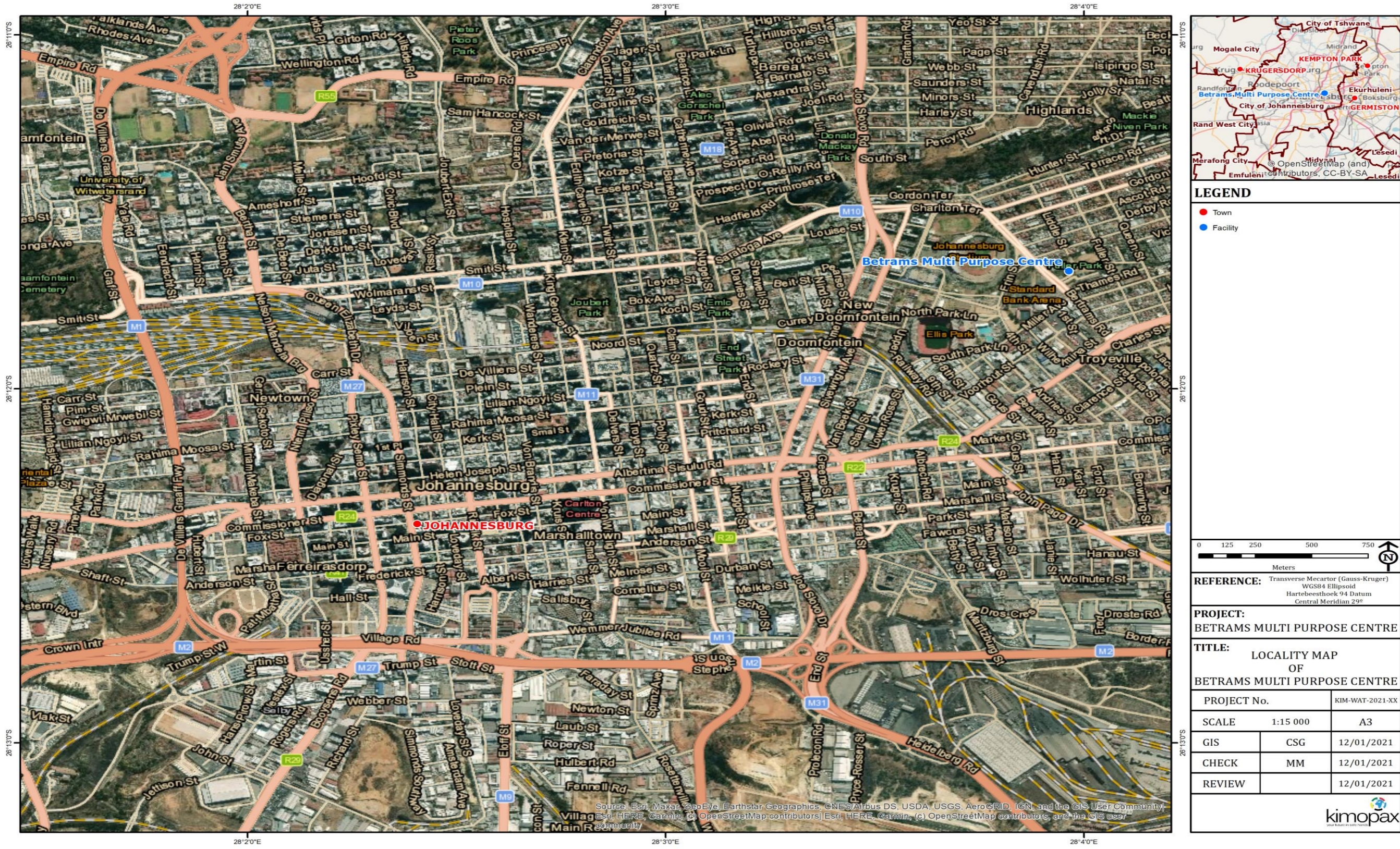
4.2 Geology and Geohydrology

According the 2626 West Rand Geological Series (1: 250 000) Fleurhof Empowerment zone is underlain by rocks of the Klipriversberg formation of the Ventersdorp system. These are Basalt and Andesite – volcanic rocks. The quartzite and lavas are hard, weathering resistant rocks which thus form hills.

According to the available geological map sheet 2526 Rustenburg at a scale of 1:250 000 the Northern Empowerment zone is underlain by granite and gneiss of Swazian geological age, i.e., rocks of the Basement Complex. Diabase in the form of dykes has intruded into the host rock.

Geological map sheet 2628 East Rand indicated the Betrams multipurpose centre being underlain by Basaltic lava, agglomerate, and tuff rocks of Alberton Westonia formation.

The 1:500 000 scale hydrological map (2526) of Johannesburg classified the aquifer as intergranular and fractured types at all the three zones and the groundwater yields being expected to be at the range 0.5- 2.0 l/s.



LEGEND

- Town
- Facility

0 125 250 500 750
Meters

REFERENCE: Transverse Mercator (Gauss-Kruger)
WGS84 Ellipsoid
Hartebeesthoek 94 Datum
Central Meridian 29°

PROJECT:
BETRAMS MULTI PURPOSE CENTRE

TITLE:
LOCALITY MAP
OF
BETRAMS MULTI PURPOSE CENTRE

PROJECT No.	KIM-WAT-2021-XX
SCALE	1:15 000 A3
GIS	CSG 12/01/2021
CHECK	MM 12/01/2021
REVIEW	12/01/2021

kimopax
your future in safe hands

Figure 1: Locality Map of Betrams multipurpose centre



Figure 2: : Locality Map of Fleurhof Empowerment zone

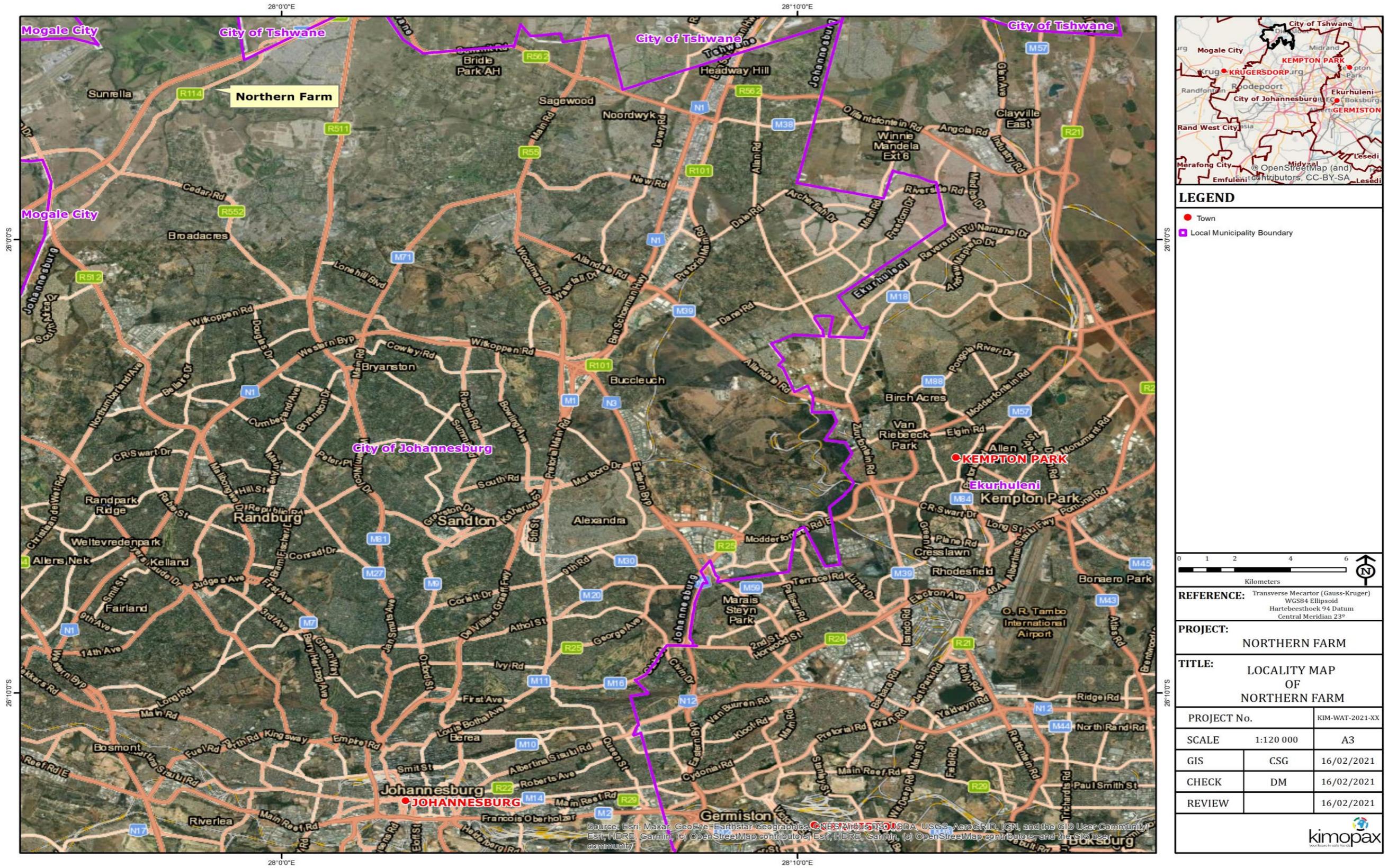


Figure 3: Locality Map of Northern Empowerment zone

5 GEOHYDROLOGICAL INVESTIGATIONS

The hydrogeological activities undertaken include desktop study, hydrocensus, aquifer testing, water quality assessments, issuing of borehole sustainable yield recommendations and geophysical surveys.

5.1 *Desktop Study*

A desktop study was conducted, and the following source of information were referenced during the investigation:

- a) Liaison with the current owner and caretaker to assist in obtaining historical data regarding existing water sources (Boreholes) in the area;
- b) Geological information was obtained from the following sheets:
 - Betrams multipurpose centre was obtained from the 1:250 000 sheet 2628 East Rand; and
 - Northern Empowerment zone was obtained from the 1:250 000 sheet 2526 Rustenburg.
- c) Hydrogeological information from the 1:500 000 scale hydrological map; 2526 Johannesburg

5.2 *Site Assessment and Hydrocensus*

The hydrocensus programme comprised of in-field verification of sourced borehole information and sampling for water quality assessments. During the hydrocensus, total of three (3) boreholes were located, two in Fleurhof and one in Northern Farm and co-ordinates were updated. One borehole (NFBH01) located in Northern Farm was deemed suitable for pumping test as it was previously equipped with a submersible pump, however, the transmitter was removed during the site assessment. The other two boreholes were reported to be low yielding, it is therefore recommended that they should be checked, and calibration tests conducted to confirm the verbal information as there is no available data to confirm this.

No samples were collected during hydrocensus, summary of borehole information is shown in Table 1.

Table 1: Summary of hydrocensus information

Farm Name	Borehole Identified	Water level (mbgl)	Depth (m)	Latitude (wgs 84)	Longitude (wgs4)	Status	Pump Type Installed	Comments
Fleurhof Farm	FFBH01	--	--	-26.19514	27.91199	Not Used	No Equipment	Pipes left inside
	FFBH02	--	--	-26.196671	27.91108	Not Used	No equipment	Geotechnical Purpose
Northern Farm	NFBH01	--	--	-25.94425	27.97665	Not Used	Submersible	Transmitter missing

5.3 Borehole and Aquifer Pumping Test

Boreholes and aquifer pumping tests are done to provide a background understanding of the hydraulic performance and boundaries of the boreholes in the study area, to determine aquifer parameters in the water strata, define the distribution of aquifers and determine sustainable borehole yields.

Geo Hunter company were contracted by Kimopax to conducted aquifer test (field work) at existing drilled borehole BBH1 in Betrams multipurpose centre. Kimopax was then further requested to conduct additional aquifer pump tests programme for the existing boreholes found at the Fleurhof and Northern Farm site during hydrocensus study. Ntomboloko company were then contracted by Kimopax to conduct the additional aquifer test at existing drilled boreholes FFBH01 in Fleurhof Farm and NFBH01 in Northern Farm.

All the work carried out by the two sub-contractors' companies was subjected to a controlled supervision by a qualified Kimopax hydrogeologist. Prior to pumping tests, static groundwater levels were measured in the boreholes to be tested to enable drawdown calculation during the aquifer test.

Borehole and aquifer pumping test was carried out to establish the hydraulic parameters of the aquifers and sustainable yield of the borehole.

5.3.1 Calibration Test

During gap analysis no available yield information of the boreholes was obtained and in order to address the gap identified, a calibration test was performed at FFBH01 and NFBH01 boreholes respectively to assess the potential yield of each borehole according to the magnitude of the

water level decline associated with each pumping rate. This information was used to select appropriate pumping rates at which to perform a stepped discharge test. A calibration test requires that water be pumped from the borehole at three or more different rates over short (15 minutes), sequential periods of time.

To date, two calibration aquifer test were completed and only NFBH01 in Northern Farm was successful during the test and was subjected to further aquifer tests (step and constant discharge tests), while FFBH01 in Fleurhof Farm failed the calibration test which means it's a low yielding borehole and no further aquifer test can be performed.

5.3.2 Step Discharge Rate Test

Step drawdown tests was performed to assess the productivity of BBH01 and NFBH01 boreholes and more clearly to define the optimum yield at which the borehole can be subjected to during constant discharge test. This test involves pumping of the borehole at three increased sequentially pumping rates each maintained for an equal length of time not less than 60 minutes. The magnitude of drawdown of the water level in the borehole in response to each of these pumping rates was measured and recorded on a time schedule as well as the actual pumping rate maintained during each step.

5.3.3 Constant Discharge Rate Test

Once the step drawdown test has been completed, BBH01 borehole was subjected to a constant discharge rate test of up to 12 hours, while NFBH01 borehole was subjected to a constant discharge rate test of up to 24 hours to assess the productivity of the aquifer according to its response to the abstraction of the water.

The aquifer response was analysed to provide information regarding the hydraulic properties of the aquifer and determine the optimum yield for the long-term utilisation. The constant discharge test entailed pumping of the boreholes at a single pumping rate which was kept at constant for the duration of the test(12hr) in BBH01 and (24hr) in NFBH01.

The pumping rates was set at a yield which will be considered sustainable for the duration of the tests. The drawdown of the borehole was measured during the test and recorded against a time schedule.

5.3.4 Recovery Test

This test was conducted to provide an indication of the ability of a borehole and aquifer system to recover from the stress of abstraction. Water level measurements was recorded during the recovery period following the end of step discharge test and constant discharge test.

Borehole and aquifer pumping test data was processed, interpreted, and managed using the following software packages:

- a) Microsoft excel based FC (Flow Characteristics) for recommend safe and sustainable yield of the borehole, and
- b) Aquabase Database - Graphical representation of the pumping test data

5.3.5 Pumping Test Results

Borehole BBH1 was subjected to the aquifer test on the 9th of February 2021 and borehole FFBH01 was subjected to the aquifer test on the 23rd of March 2021, while borehole NFHB01 was subjected to the aquifer test on the 24th of March 2021. Borehole and aquifer pumping tests were carried out to establish the borehole efficiencies, aquifer parameters and yield estimates. Testing of boreholes was done with the aid of positive displacement pump, and it entailed step drawdown test to determine borehole efficiencies, constant rate test to determine the aquifer parameters and yield estimates and recovery test to provide information pertaining to the ability of the borehole and groundwater system to recover from the stress of abstraction. The detailed pumping test graphs and data are presented in Appendix C. Below is Table 1 summarizing the aquifer test programme at each borehole.

Table 2: Summary of the pump testing programme

Borehole Number	Latitude	Longitude	Borehole Depth (m)	Measured WL (mbgl)	Borehole - Testing							Comments
					NO: SDT	Date	Test Type	Final SDT Yield	PI	CDT Yield	CDT Duration	
						Completed	SDT/CDT	l/s	l/s	l/s	hrs	
BBH1	-26.19454	28.06602	78	2.53	3	12 February 2021	CDT	5.20	-	5.20	12	Good yielding borehole with good recovery, recommended for production
NFBH01	-25.94425	27.97665	42.34	0.00	5	26 March 2021	CDT	1.00	-	1.00	24	Good yielding borehole with good recovery, recommended for production
FFBH01	-26.19514	27.91199	52	40.80	-	23-Mar-21	-	-	-	-	-	Low yielding borehole and poorly designed, not recommended for production

5.3.6 Borehole Management Recommendations

Borehole management recommendations are made with the aim of providing a sustainable water supply, even during prolonged periods when the annual rainfall is below average, and they are based on well-established methodologies using mathematical relationships between abstraction rates, and the drawdown of water levels during pumping to determine the groundwater flow characteristics.

Borehole BBH1, FBH01, and NFBH01 aquifer test data was analysed using the spreadsheet-based FC-method as developed by the Van Tonder and others (Van Tonder et.al, 2001), which uses applications from the Cooper-Jacob, basic Flow Characterisation (FC) and Barker methods. A summary of the borehole testing results and recommended safe yields is given in Table 3. The Aquabase hydrographs provided in Appendix C water level recovery tests were good with 100% recovery achieved within pumping time in BBH1 and NFBH01 production boreholes. Detailed borehole management recommendations are presented in Appendix D.

Table 3: Borehole management recommendations (Existing Boreholes)

Borehole No.	Latitude	Longitude	Depth (m)	SWL (m)	Borehole Management Recommendations					
					Yield (l/s)	Duty (hrs/day)	Pump Set (m)	T (m ² /d)	Dynamic WL (mbgl)	Comments
BBH1	-26.19454	28.06602	78	2.53	3.05	12	50	91.33	40	Production Borehole
NFBH01	-25.94425	27.97665	42.34	0.00	1	12	36	11.40	16	Production Borehole
FFBH01	-26.19514	27.91199	52	40.80	-	-	-	-	-	Low yielding, Not recommended for use. Poorly designed
Totals					4.05					



Figure 4: MR map for Betrams Multi-purpose



Figure 5: MR map for Northern Farm



Figure 6: MR map for Fleurhof Farm

5.4 Water Quality Analysis

The groundwater sample was collected from borehole BBH1, FFBH01, and NFBH01 at the end of the aquifer pump test to obtain a representative elementary volume sample and submitted to Water Laboratory Services (accredited SANAS Lab) for hydrochemical analysis. *****It should be noted that only results for BBH1 reflect in this report, we still awaiting for boreholes FFBH01 and NFBH01 water test analysis results from the laboratory and the report is subject to be updated once the results are received.**

The elements selected for analysis are those in accordance with the South African National Standard (SANAS 241-1: 2015) for Drinking Water, mainly those that occur in high concentrations as to cause health, aesthetic or other related problems. The water quality results are compared with the South African National Standard (SANS 241-1:2015) which is used as reference as it includes risk-based elements, whereas the DWAF guidelines (Quality of Domestic Supplies, Volume 1: Assessment guide), 2nd Ed. 1998). is used to classify the water quality. The domestic water guideline (DWAF - 1998) was used to classify water quality classes as shown in Table 4.

Table 4: DWS water quality classes (1998), describing the effects of the different classes of water.

Water quality class	Description	Drinking health effects
Class 0	Ideal water quality	No effects, suitable for many generations.
Class 1	Good water quality	Suitable for lifetime use. Rare instances of sub-clinical effects
Class 2	Marginal water quality, water suitable for short-term use only	May be used without health effects by majority of users but may cause effects in some sensitive groups. Some effects possible after lifetime use.
Class 3	Poor water quality	Poses a risk of chronic health effects, especially in babies, children and the elderly. May be used for short-term emergency supply with no alternative supplies available.
Class 4	Unacceptable water quality	Severe acute health effects, even with short-term use.

The water quality results of BBH1 shows the nitrate concentration to be slightly exceeding the class 1 of limit (10 mg/l) of domestic water guideline and therefore this water is classified as class 2 type based on the guideline. This water type may be used without health effects by majority of users but may cause effects in some sensitive groups. However, SANAS 241-1: 2015 indicated this water type to be slightly exceeding the nitrite concentration limit of Acute health of 11mg/l of which may poses an immediate unacceptable health risk; therefore, this water type is considered marginal and acceptable for human consumption. The elevated nitrate from this borehole can be attributed to the fertilizes since the borehole is located near the farm field. Table 5 shows the results and the laboratory certificated are attached as Appendix A.

Table 5: Laboratory hydrochemical results for borehole BBH1

	Parameters	Units	SANS241:2015	BBH1
Physical / Aesthetic Determinants	pH	pH units	≥5 to ≤9.7	7
	TDS	mg/l	≤1 200	328
	EC	mS/m	≤170	37.6
	Total Alkaline	mg/l	-	64
	Total Hardness	mg/l	-	148
Macro Determinants	Ca	mg/l	≤150	33
	Mg	mg/l	≤70	16
	NO ₃ as N	mg/l	≤11	12
	SO ₄	mg/l	≤500	22
	F	mg/l	≤1.5	<0.2
	N	mg/l	≤0.9	<0.05
	Cl	mg/l	≤300	31
	Na	mg/l	≤200	10
	K	mg/l	≤50	1.1
Micro Determinants	Zn	mg/l	≤5	<0.025
	Cu	mg/l	≤0.03	0.082
	Fe	mg/l	≤2	0.045
	Pb	mg/l	≤0.01	<0.001
	Mn	mg/l	≤0.4	<0.025
	As	mg/l	≤6	<0.001
	Al	mg/l	≤0.3	<0.100
	NH ₃	mg/l	≤1.5	0.1
	Cd	mg/l	≤0.003	<0.001
Ni	mg/l	≤0.07	<0.025	
Water quality	SANS 241 2015			Acceptable

	DWS Water Quality Class	Class 2
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5.5 Ground Geophysical Surveys

5.5.1 Geophysical Planning

Kimopax conducted a desktop study that involved review of the geology, hydrogeology and the mapped structural lineaments on various maps. It was observed that none of the structural lineaments passes through Fleurhof and Northern Empowerment Zones. The closest structural lineament that was observed on the geological map was at Northern Empowerment zone. However, it was at the boundary of the farm and accessibility for survey due to the Steyn City perimeter wall was impossible. Therefor geophysical was planned and performed within the property boundaries of the Empowerment zones and it should be noted that there is no guarantee of what was picked up as mostly will be going for weathering zone or not mapped structures.

5.5.2 Ground Geophysical Surveys

The main objective of the geophysical surveys was to investigate weathering and fracturing associated with geological structures that could act as preferential groundwater flow paths, and to assist in selecting proposed drilling positions.

Two methods were utilised during groundwork; these were the Electromagnetic (EM) and magnetic methods. The EM method was conducted using a Geonics EM 34 instrument with a coil.

separation of 20 m and 40 m and utilising the vertical and horizontal orientations. Two traverses were surveyed and marked in the field at each site using a handheld GPS for reference and targeting purposes. Station spacing was set at ten meters for EM and five meters for Magnetic method to ensure that possible vertical to subvertical features could be detected. The line directions were chosen to intersect possible structures perpendicular to strike. The following is a description of the two methods used. The brief discussion of the geophysical techniques employed are discussed in the sections below.

5.5.2.1 The Magnetic Method

The aim of magnetic surveys is to investigate sub surface geology based on anomalies in the earth's magnetic field resulting from the varying magnetic properties of underlying rocks. Different rock types have different magnetic susceptibilities, which may have remnant magnetism. The contrast in magnetic susceptibility and/or remnant magnetism gives rise to anomalies related to structures like intrusive dykes, faults, lithologic contacts and weathered/fractured bedrock.

5.5.2.2 Geonics Em-34 Terrain Conductivity Meter

The EM-34 is used for rapid measurements of terrain conductivity with a maximum effective penetration depth of 60 meters. The transmitter coil is energized with an alternating current. The time-varying primary magnetic field arising from the alternating current induces very small currents in the earth. These currents generate a secondary magnetic field, which is measured by the receiver coil, together with the primary magnetic field. The EM-34 system utilizes a transmitter coil and a receiver coil at specific designed operating frequencies, coil separations and orientations to directly measure apparent terrain conductivity in mS/m.

The EM-34, which is two-man portable, has the two coils flexibly connected. The coil spacing is measured electronically, which can be 10, 20 or 40 meters to directly vary the effective exploration depths. For the purpose of the study 40m coil separation was used.

With the horizontal coil orientation, the EM-34 system is effective in locating near vertical conductive (fracture) zones, provided conductor width is less than the coil separation. The associated EM-34 anomaly is typically a negative peak response (relative to background conductivities) centred above the fracture and flanked with two positive peaks.

Background crossover, between negative and positive peaks, is a function of coil separation and generally equals to inter coil spacing. The detectability of fracture zones depends on their width, the thickness and conductivity of the overburden layer, the quality of the groundwater and the depth of the ground water level.

5.5.3 Geophysical Survey Results

The surveyed geophysical data was captured, processed and interpreted relative to the geological setting and the targeted structures. The results of the surveyed traverses will be

discussed separately per area in the following sections. Drilling targets were derived from these interpretations for possible drilling of water source boreholes.

5.5.3.1 Fleurhof farm

Two traverses (FHT1 and FHT2) were conducted successfully and location of these are shown in Figure 7 and geophysical profiles attached as Appendix B. Traverse FHT1 was surveyed from the north to south direction with both Magnetic and Electromagnetic method. The cultural interferences along this line were fence line and a possible underground pipeline that was noted on site and taken into consideration during interpretation. The possible anomaly on the both the magnetic and EM between stations 65 to 90 might possible indicated weathered subsurface.

Second traverse FHT2 was surveyed over a total distance of 70m from the from the western direction to Eastern direction. No prominent anomaly was noticed along this traverse and therefor no drilling site was selected.

5.5.3.2 Northern Farm

Three traverses were planned in this area. However, only two were accessible for survey, these are shown in Figure 8 and profiles attached as Appendix E.

The first traverse NTT1 was conducted from north to south direction with both Magnetic and Electromagnetic method. No cultural interferences along this line were noticed during the survey. The possible anomaly on the both the magnetic and EM between stations 20 to 100 might possibly indicated a geological structure and a possible weathered subsurface anomaly is indicated at station 230. Two drilling targets are proposed from this data at stations 80 and 290 to the total depth of 80 meters.

The second traverse NTT2 was conducted from the northeast to southwest direction over a total distance of 100 meters. This traverse had only the steel road sign that could possibly act as noise and that was noted on site and taken into consideration during data interpretation. No prominent anomaly was noticed along this traverse except small one between station 40 and 65. Low confidence proposed drilling site is selected at station 50. This station should only be drilled should if only proposed targets at traverse NTT1 failed.

Due to limitation of space within the project area, it should be noted that no major geological structure targets were observed on the geological map within the project boundary. Ground

geophysics survey was contacted to assist in located weathered area and possibly undocumented geological structures. This could possibly lead to low yield to dry borehole being drilled.

Table 6: Summarised list of sites selected for exploration drilling.

Traverse No/Station	Latitude	Longitude	Geological Structure	Proposed Drill Depth (m)	Description
NTT1/80	-26.196136	27.910728	possible geological lineament	80	High priority
NTT1/230	-25.946271	27.977364	weathered zone	80	Medium priority
NTT2/50	-25.943890	27.976700	weathered zone	80	Low confidence site
FHT1/80	-25.944424	27.977661	weathered zone on	80	Low confidence site



Figure 7: Location of proposed drilling sites for Northern Empowerment zone



Figure 8: Location of proposed drilling sites for Fleurhof Empowerment zone

5.5.4 Assumptions

It is assumed that no major pipelines were evident in the areas designated for drilling apart from the power lines and fences which are visible features. All these zones were noted for interpretation purposes; however, some cultural effects could exist in the subsurface and could influence the results significantly.

Do note that this is one interpretation of the available data and due to the methodology applied, other outcomes are certainly possible. In the absence of regional data, no confirmation of the existence of dykes can be inferred unless also evident on the geology data sets.

6 CONCLUSIONS

The following conclusion were made based on the desktop and fieldwork assessment conducted at the three sites:

- a) The study area included three sites that area apart from each other, with one site (Betrams) requiring aquifer testing of one borehole and the other two sites (Northern and Fleurhof) only required geophysical surveys for borehole siting and selection of locations for exploration drilling.
- b) Three boreholes were located in Fleurhof and Northern farms during hydrocensus study, two and one, respectively. Borehole FFBH02 could not be tested as it was not a production borehole, while FFBH01 and NFBH01 boreholes were tested as part of additional aquifer pump test program as previously there was no provided budget approved for the borehole to be tested.
- c) Geological maps indicate the Northern farm area to be underlined to be underlined by the gneiss and granites rocks with some diabase cutting though in the form of dykes, Fleurhof farm area is covered by volcanic rocks like basalts and andesite and the third area Betrams being dominated by basaltic lava and tuff rocks of Alberton Westonaria formation.
- d) Aquifer test and pump testing was completed successfully in two boreholes located within the premises of Betrams Multiple Centre and Northern Farm. The boreholes: BBH1 was tested with 3 steps and a constant drawdown for a duration of 12 hrs that was followed by a recovery, while NFBH01 was tested with 5 steps and a constant drawdown for a duration of 24 hrs that followed by a recovery.

- e) Drawdown of 8 m in BBH1 and 0.00 m in NFBH01 was recorded and recovery from the boreholes BBH1 and NFBH01 was 100%. Based on the data interpretation from this borehole a yield of 3.05l/s over a 12 hrs duty cycle is recommended for BBH1, while a borehole yield of 1/s over a 12 hrs duty cycle is recommended for NFBH01.
- f) Ground geophysics was planned Fleurhof Empowerment zone and Northern Empowerment zone. However, it was observed on the geological map that no structural lineaments cross through the boundaries of both areas.
- g) Geophysics was conducted successfully using both Magnetic and Electromagnetic survey targeting any weathered zone and possible lineaments that could have not being marked on the geological maps.
- h) Based on the geophysics results two sites were selected at Northern zone and only one proposed drilling site selected at Fleurhof. Fleurhof site is classified as low confidence site due to the anomaly not being prominent.

7 RECOMMENDATIONS

Based on the hydrogeological investigations, data assessments and conclusions made, the following recommendations are proposed:

- a) Production borehole recommended at Betrams must be protected by a fenced area/pump house and be equipped with a water monitoring and sampling facility;
- b) Critical water levels of 16 mbgl for the borehole at Betrams as indicated on the management recommendations must not be exceeded. Once these levels are reached daily abstraction rates must be reduced;
- c) Water levels and abstraction should be monitored and recorded monthly at Betrams;
- d) Monthly water quality monitoring of production borehole, sample to be analysed for macro chemical elements as well as bacteriological analysis (fit for human consumption).
- e) The exploration drilling of the borehole at Fleurhof and Northern zone should be conducted using down the hole rotary air percussion equipment and the work be carried out in accordance but not limited to the Department of Water and Sanitation (DWS) minimum standards and guidelines;

- f) The boreholes drilling should be supervised by a competent hydrogeologist and geological/lithological information and hydraulic information such as water strikes information be recorded;
- g) Successful boreholes drilled should be subjected to pumping tests to determine the safe and sustainable groundwater yields. This should be done according to scientifically acceptable standards; and
- h) It is of great importance to submit the samples of groundwater to an accredited laboratory for hydrochemical analysis to determine if the water is suitable for human consumption.

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APPENDIX A:

Laboratory Water Quality Certificate

Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province



WATERLAB (Pty) Ltd

Reg. No.: 1983/009165/07 V.A.T. No.: 4130107991

23B De Havilland Crescent
Persequor Techno Park
Meiring Naudé Drive
Pretoria

P.O. Box 283, Persequor Park, 0020
Tel: +2712 - 349 - 1066
Fax: +2786 - 654 - 2570
e-mail: admin@waterlab.co.za



CERTIFICATE OF ANALYSES
GENERAL WATER QUALITY PARAMETERS

Date received: 2021-02-12	Report number: 98065	Date completed: 2021-03-03
Project number: 1000	Order number: KIM-WAT-2021-03	
Client name: Kimopax (Pty) Ltd	Contact person: Mr. C. Monokafala	
Address: P.O Box 4077, Halfway House, Johannesburg, Gauteng 1685	e-mail: collen@kimopax.com	
Telephone: 011 312 9765	Facsimile: 011 312 9768	Mobile: 083 662 1787

Analyses in mg/l (Unless specified otherwise)	Method Identification	Sample Identification: Betrams	
		Sample Number	Date/Time Sampled
		BMBH1	
		119065	
		N/A	
pH - Value @ 25 °C	A	WLAB065	7.0
Electrical Conductivity in mS/m @ 25°C	A	WLAB002	37.6
Total Dissolved Solids @ 180°C	A	WLAB003	328
Suspended Solids at 105°C	A	WLAB004	<1.0
Total Alkalinity as CaCO ₃	A	WLAB007	64
Total Hardness as CaCO ₃	A	WLAB051	148
Chloride as Cl	A	WLAB046	31
Sulphate as SO ₄	A	WLAB046	22
Fluoride as F	A	WLAB014	<0.2
Nitrate as N	A	WLAB046	12
Nitrite as N	A	WLAB046	<0.05
Total Phosphate as P	N	WLAB031	<0.2
Ortho Phosphate as P	A	WLAB046	0.1
Free Cyanide as CN	N	WLAB056	<0.010
Free and Saline Ammonia as N	A	WLAB046	0.1
Sodium as Na	A	WLAB015	10
Potassium as K	A	WLAB015	1.1
Calcium as Ca	A	WLAB015	33
Magnesium as Mg	A	WLAB015	16
Aluminium as Al	A	WLAB015	<0.100
Arsenic as As	A	WLAB050	<0.001
Boron as B	A	WLAB015	<0.025
Cadmium as Cd	A	WLAB050	<0.001
Cobalt as Co	A	WLAB015	<0.025
Copper as Cu	A	WLAB015	0.082
Iron as Fe	A	WLAB015	0.045
Lead as Pb	A	WLAB050	<0.001

E. Nkabinde - Chemical Technical Signatory

A = Accredited N = Not Accredited S = Subcontracted

Tests marked "Not SANAS Accredited" in this report are not included in the SANAS Schedule of Accreditation for this Laboratory.

Results marked "Subcontracted Test" in this report are not included in the SANAS Schedule of accreditation for this Laboratory.

Sample condition acceptable unless specified on the report.

The information contained in this report is relevant only to the sample/samples supplied to WATERLAB (Pty) Ltd. Any further use of the above information is not the responsibility of WATERLAB (Pty) Ltd. Except for the full report, part of this report may not be reproduced without written approval of WATERLAB (Pty) Ltd. Details of sample conducted by Waterlab (PTY) Ltd according to WLAB/Sampling Plan and Procedures/SOP are available on request.

Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province



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Reg. No.: 1983/009165/07 V.A.T. No.: 4130107991

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Fax: +2786 - 654 - 2570
e-mail: admin@waterlab.co.za



CERTIFICATE OF ANALYSES
GENERAL WATER QUALITY PARAMETERS

Date received: 2021-02-12	Report number: 98065	Date completed: 2021-03-03
Project number: 1000	Order number: KIM-WAT-2021-03	
Client name: Kimopax (Pty) Ltd	Contact person: Mr. C. Monokafala	
Address: P.O Box 4077, Halfway House, Johannesburg, Gauteng 1685	e-mail: collen@kimopax.com	
Telephone: 011 312 9765	Facsimile: 011 312 9768	Mobile: 083 662 1787

Analyses in mg/l (Unless specified otherwise)	Method Identification	Sample Identification: Betrams	
		Sample Number	Date/Time Sampled
		BMBH1	
		119065	
		N/A	
Manganese as Mn	A	WLAB015	<0.025
Mercury as Hg	A	WLAB047	<0.001
Nickel as Ni	A	WLAB015	<0.025
Zinc as Zn	A	WLAB015	<0.025
% Balancing	N	---	99.3

E. Nkabinde - Chemical Technical Signatory

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Sample condition acceptable unless specified on the report.

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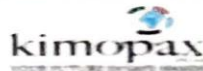
Page 2 of 2

APPENDIX B:

Chain of Custody

Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones – Gauteng Province

CHAIN OF CUSTODY DOCUMENTATION - WATER

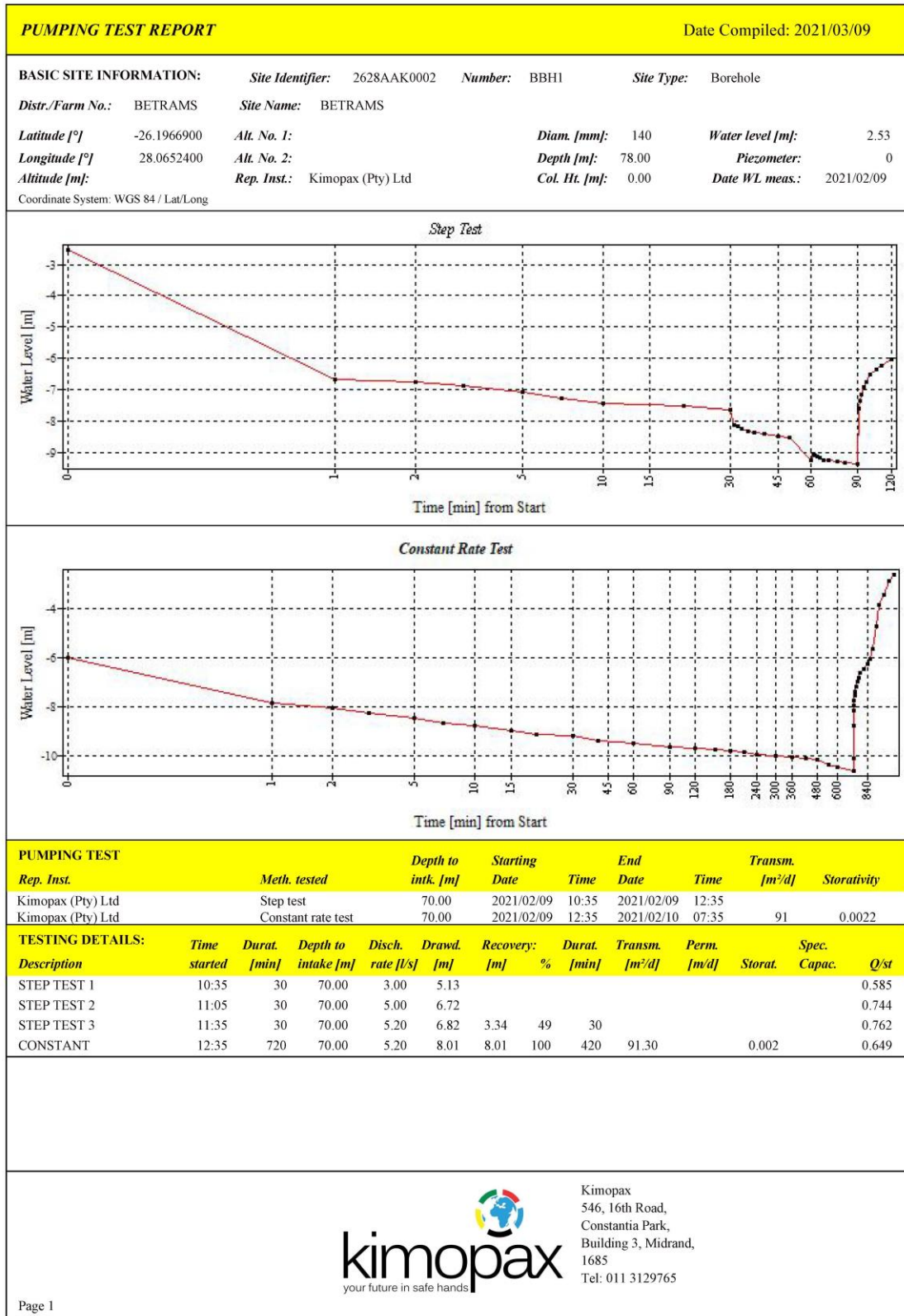
Project ID: KIM-WAT-2021-03		Quote/Order No.: KIM-WAT-2021-03		KIMOPAX (PTY) LTD.		Phone: (011) 312 9765																																																
Site Location: BETRAMS		Lab Name: Waterlab		546 16th Road, Constantia Park, Midrand		Fax: (011) 312 9768																																																
Sampled By: Kimopax		BY: _____		Invoice to be sent to PO Box 4077, Halfway House, 1685		Project Manager: Colleen Monokofala																																																
Turnaround (Days): 10		Report Format: HARD <input type="checkbox"/> FAX <input type="checkbox"/> DISC <input type="checkbox"/> EMAIL <input type="checkbox"/> OTHER <input type="checkbox"/>		Contact Phone: 011 312 9765 / 976 100 0872		Email: colleen@kimopax.com & Daniel@kimopax.com																																																
Email Format: PDF <input type="checkbox"/> Excel <input type="checkbox"/> Other <input type="checkbox"/>		Email Address: colleen@kimopax.com and daniel@kimopax.com		Email: colleen@kimopax.com & Daniel@kimopax.com																																																		
Media (Water): Total <input type="checkbox"/> Yes / No		Filtered <input type="checkbox"/> Yes / No		ICPMS <input type="checkbox"/> Yes / No																																																		
Comments/Special Instructions:				ANALYSIS REQUIRED																																																		
				<table border="1"> <thead> <tr> <th>NO CONTAINERS</th> <th>POSSIBLE HIGH CONCENTRATION</th> <th>pH</th> <th>TDS</th> <th>EC</th> <th>Total Alkalinity</th> <th>K, Ca, Mg, Fe</th> <th>Cl, F, SO₄, NO₃, NO₂, NH₄</th> <th>Al, Mn, Cu</th> <th>Total Hardness</th> <th>B, Cr, Ni</th> <th>Total P and PO₄</th> <th>Si, Pb, Zn, Cd, Cr</th> <th>Cr (III)</th> <th>As, Hg</th> <th>Cr (VI)</th> <th>Pb</th> <th>UUV</th> <th>Total Coliforms, Total Plate Counts</th> <th>Faecal Coliforms</th> <th>E.coli</th> <th>Residual Chlorine (Free)</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>						NO CONTAINERS	POSSIBLE HIGH CONCENTRATION	pH	TDS	EC	Total Alkalinity	K, Ca, Mg, Fe	Cl, F, SO ₄ , NO ₃ , NO ₂ , NH ₄	Al, Mn, Cu	Total Hardness	B, Cr, Ni	Total P and PO ₄	Si, Pb, Zn, Cd, Cr	Cr (III)	As, Hg	Cr (VI)	Pb	UUV	Total Coliforms, Total Plate Counts	Faecal Coliforms	E.coli	Residual Chlorine (Free)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NO CONTAINERS	POSSIBLE HIGH CONCENTRATION	pH	TDS	EC	Total Alkalinity	K, Ca, Mg, Fe	Cl, F, SO ₄ , NO ₃ , NO ₂ , NH ₄	Al, Mn, Cu	Total Hardness	B, Cr, Ni	Total P and PO ₄	Si, Pb, Zn, Cd, Cr	Cr (III)	As, Hg	Cr (VI)	Pb	UUV	Total Coliforms, Total Plate Counts	Faecal Coliforms	E.coli	Residual Chlorine (Free)																																	
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																
<table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE MATRIX</th> <th>SAMPLE DATE</th> <th>SAMPLE TIME</th> <th>CONTAINER/PRESERVATIVE</th> <th>SALINITY (ppm)</th> </tr> </thead> <tbody> <tr> <td>BMBH1</td> <td>Groundwater</td> <td>2021/02/09</td> <td>18:30</td> <td></td> <td></td> </tr> </tbody> </table>				SAMPLE ID	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	CONTAINER/PRESERVATIVE	SALINITY (ppm)	BMBH1	Groundwater	2021/02/09	18:30																																									
SAMPLE ID	SAMPLE MATRIX	SAMPLE DATE	SAMPLE TIME	CONTAINER/PRESERVATIVE	SALINITY (ppm)																																																	
BMBH1	Groundwater	2021/02/09	18:30																																																			
<p>SAMPLE MATRIX = Water / Effluent / Free Product / Other</p> <p>SAMPLE TYPE = Composite (C) / Discrete (DC) / Disturbed (DS) / Core (CR)</p> <p>Container Type and Preservative Codes: P = Natural Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Preserved Vial; VS = Sulphuric Acid Preserved Vial; BS = Sodium Borate Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; F = EDTA Preserved Bottle; ST = Sterile Bottle; O = Other</p>																																																						
SIGNATURE				COMPANY		DATE		TIME		SIGNATURE		COMPANY		DATE		TIME		Number of Containers (Maximum 10)																																				
RELEASED BY: <i>Mogosi</i>				KIMOPAX		2021/02/12		13:00																																														
RECEIVED BY: <i>Mogosi</i>				<i>Receives</i>																																																		
RELEASED BY:																																																						
RELEASED BY:																																																						
RELEASED BY:																																																						
RELEASED BY:																																																						
										To Be Filled Out By Analysing Laboratory Security Seal <input type="checkbox"/> Chilled <input type="checkbox"/> Suitable Containers <input type="checkbox"/> Process <input type="checkbox"/> Cool Box <input type="checkbox"/> Refreeze <input type="checkbox"/>		LAB BATCH NUMBER Ref: <input type="text"/> Address: <input type="text"/>																																										

THIS FORM IS TO BE SIGNED BY KIMOPAX STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

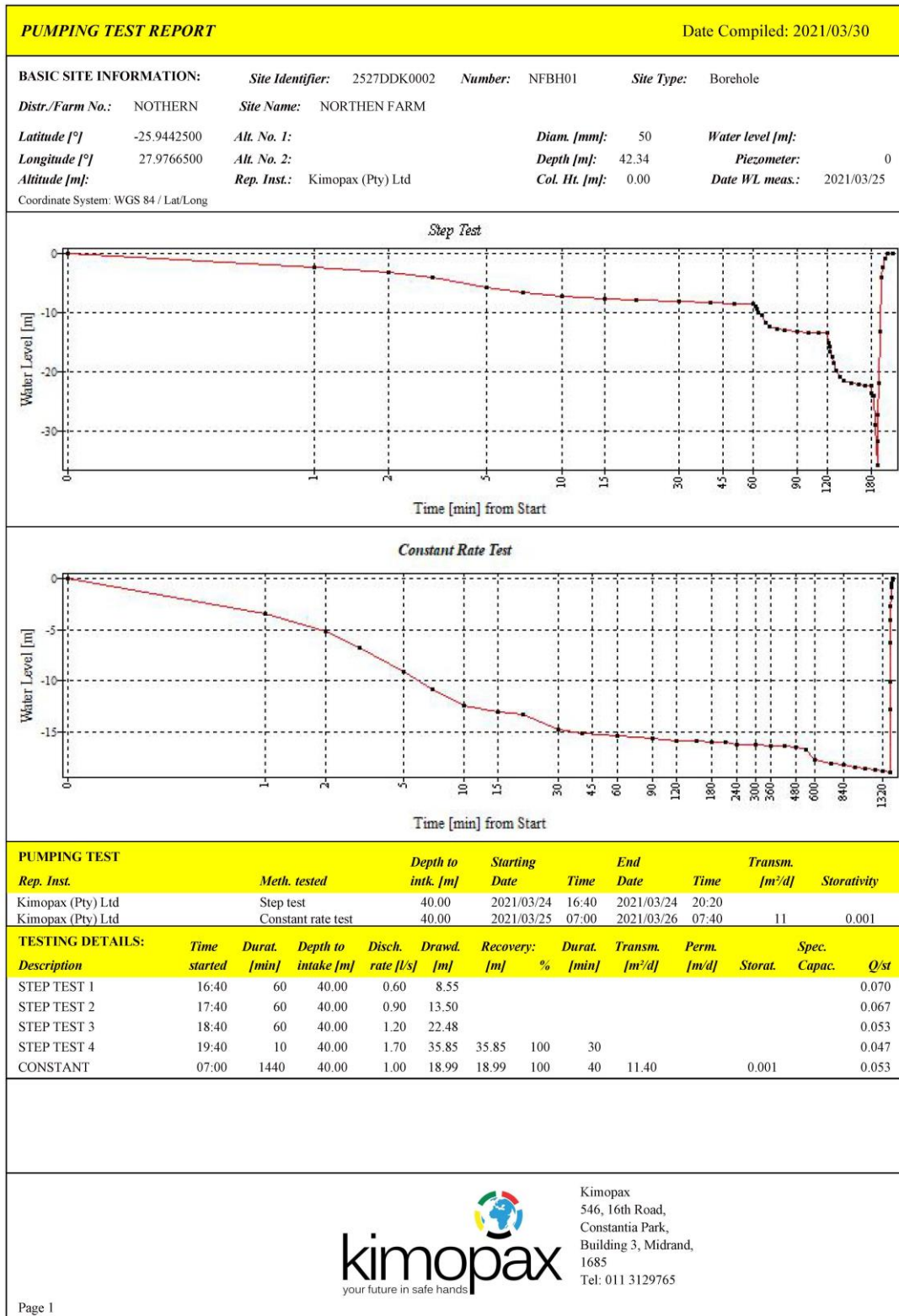
APPENDIX C:

Pumping Graphs.

Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province



Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province




Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province




APPENDIX D:

Preliminary Borehole Management Recommendations


Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province

MANAGEMENT RECOMMENDATIONS										Date Compiled: 2021/03/09													
BASIC SITE INFORMATION: <i>Site Identifier:</i> 2628AAK0002 <i>Number:</i> BBHI <i>Site Type:</i> Borehole																							
<i>Distr./Farm No.:</i> BETRAMS		<i>Site Name:</i> BETRAMS																					
<i>Latitude [°]:</i> -26.1966900		<i>Alt. No. 1:</i>		<i>Diam. [mm]:</i> 140		<i>Last static water lev. [m]:</i> 2.53																	
<i>Longitude [°]:</i> 28.0652400		<i>Alt. No. 2:</i>		<i>Depth [m]:</i> 78.00		<i>Piezometer:</i> 0																	
<i>Altitude [m]:</i>		<i>Rep. Inst.:</i> Kimopax (Pty) Ltd		<i>Col. Ht. [m]:</i> 0.00		<i>Date WL meas.:</i> 20210209																	
Coordinate System: WGS 84 / Lat/Long																							
EXISTING EQUIPMENT:						USE APPLICATION:																	
PUMP:			ENGINE:			<i>Site Status:</i> Unused																	
<i>Type of Inst.:</i>			<i>Type of Power:</i>			<i>Purpose:</i> Production (water supply)																	
<i>Manufacturer:</i>			<i>Manufacturer:</i>			<i>Consumer:</i> Urban																	
<i>Depth to intk. [m]:</i>			<i>Power Rating [kW]:</i>			<i>Application:</i> Domestic - all purposes																	
WATER CHEMISTRY: Standard: SANS 241:2015																							
<i>Sample No.:</i> BBHI		<i>Date sampled:</i> 2021/02/10		<i>Depth sampl. [m]:</i> 70.00		<i>Comment:</i>																	
Chemical and Physical Parameters:						Bacteriol. Parameters:			Calculated Parameters:														
<i>pH:</i> 7.00		<i>Na:</i> 10.00		<i>Cl:</i> 31.00		<i>E. Coli:</i>			<i>Langelier:</i> -1.230														
<i>EC [mS/m]:</i> 37.60		<i>K:</i> 1.10		<i>NO3 as N:</i> 12.00		<i>Faec. Col.:</i>			<i>Aggr. Index:</i> 10.722														
<i>TDS:</i> 328.0		<i>Si:</i>		<i>SO4:</i> 22.00		<i>Total Col.:</i>			<i>Ion Bal. Err. [%]:</i> -0.761														
<i>Tot. Alk.:</i> 64.00		<i>Al:</i> 0.10		<i>F:</i> 0.20		<i>SPC:</i>			<i>Tot. Hardness:</i> 148.143														
<i>Ca:</i> 33.00		<i>Fe:</i> 0.05							<i>SAR:</i> 0.357														
<i>Mg:</i> 16.00		<i>Mn:</i> 0.03																					
Concentrations in [mg/l] where applicable Bacteriological parameters in [counts/100ml]																							
TESTING DETAILS:																							
<i>Description</i>		<i>Date</i>		<i>Durat. [min]</i>		<i>Depth to intk. [m]</i>		<i>Disch. rate [l/s]</i>		<i>Drawd. [m]</i>		<i>Recovery %</i>		<i>Spec. [min]</i>		<i>T [m²/d]</i>		<i>Storage</i>		<i>Spec. capac.</i>		<i>Comment</i>	
STEP TEST 1		20210209		30		70.00		3.00		5.13													
STEP TEST 2		20210209		30		70.00		5.00		6.72													
STEP TEST 3		20210209		30		70.00		5.20		6.82		3.34		49.0		30							
CONSTANT		20210209		720		70.00		5.20		8.01		8.01		100.0		420		91.30		0.002			
RECOMMENDATIONS:																							
<i>Prior.</i>		<i>Rec. equipm.</i>		<i>Depth to intk. [m]</i>		<i>Type of power</i>		<i>Duty cyc. [hrs]</i>		<i>Disch. rate [l/s]</i>		<i>Water quality</i>		<i>Dyn. water level [m]</i>		<i>Crit. water level [m]</i>							
1		Mono-type pump		48.00		Electric motor		12		3.05		NOT ACCEPTABLE		10.50		16.50							
<i>Note:</i>																							
 <p>Kimopax 546, 16th Road, Constantia Park, Building 3, Midrand, 1685 Tel: 011 3129765</p>																							
Page 1																							

Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province

MANAGEMENT RECOMMENDATIONS										Date Compiled: 2021/03/30	
BASIC SITE INFORMATION: <i>Site Identifier:</i> 2527DDK0002 <i>Number:</i> NFBH01 <i>Site Type:</i> Borehole											
<i>Distr./Farm No.:</i> NOTHERN		<i>Site Name:</i> NORTHERN FARM									
<i>Latitude [°]:</i> -25.9442500			<i>Alt. No. 1:</i>			<i>Diam. [mm]:</i> 50		<i>Last static water lev. [m]:</i> 0.00			
<i>Longitude [°]:</i> 27.9766500			<i>Alt. No. 2:</i>			<i>Depth [m]:</i> 42.34		<i>Piezometer:</i> 0			
<i>Altitude [m]:</i>			<i>Rep. Inst.:</i> Kimopax (Pty) Ltd			<i>Col. Ht. [m]:</i> 0.00		<i>Date WL meas.:</i> 20210325			
<small>Coordinate System: WGS 84 / Lat/Long</small>											
EXISTING EQUIPMENT:						USE APPLICATION:					
PUMP:						ENGINE:					
<i>Type of Inst.:</i>						<i>Type of Power:</i>					
<i>Manufacturer:</i>						<i>Manufacturer:</i>					
<i>Depth to intk. [m]:</i>						<i>Power Rating [kW]:</i>					
Site Status: Standby (Production)						Purpose: Production (water supply)					
Consumer: Non-urban						Application: Domestic - all purposes					
WATER CHEMISTRY: Standard: SANS 241:2015											
<i>Sample No.:</i>		<i>Date sampled:</i>			<i>Depth sampl. [m]:</i>			<i>Comment:</i>			
Chemical and Physical Parameters:						Bacteriol. Parameters:			Calculated Parameters:		
<i>pH:</i>		<i>Na:</i>		<i>Cl:</i>		<i>E. Coli:</i>			<i>Langelier:</i>		
<i>EC [mS/m]:</i>		<i>K:</i>		<i>NO3 as N:</i>		<i>Faec. Col.:</i>			<i>Aggr. Index:</i>		
<i>TDS:</i>		<i>Si:</i>		<i>SO4:</i>		<i>Total Col.:</i>			<i>Ion Bal. Err. [%]:</i>		
<i>Tot. Alk.:</i>		<i>Al:</i>		<i>F:</i>		<i>SPC:</i>			<i>Tot. Hardness:</i>		
<i>Ca:</i>		<i>Fe:</i>		<i>SAR:</i>							
<i>Mg:</i>		<i>Mn:</i>		<small>Concentrations in [mg/l] where applicable Bacteriological parameters in [counts/100ml]</small>							
TESTING DETAILS:											
<i>Description</i>	<i>Date</i>	<i>Durat. [min]</i>	<i>Depth to intk. [m]</i>	<i>Disch. rate [l/s]</i>	<i>Drawd. [m]</i>	<i>Recovery [%]</i>	<i>T [m²/d]</i>	<i>Storage</i>	<i>Spec. capac.</i>	<i>Comment</i>	
STEP TEST 1	20210324	60	40.00	0.60	8.55						
STEP TEST 2	20210324	60	40.00	0.90	13.50						
STEP TEST 3	20210324	60	40.00	1.20	22.48						
STEP TEST 4	20210324	10	40.00	1.70	35.85	35.85	100.0	30			
CONSTANT	20210325	1440	40.00	1.00	18.99	18.99	100.0	40	11.40	0.001	
RECOMMENDATIONS:											
<i>Prior.</i>	<i>Rec. equipm.</i>	<i>Depth to intk. [m]</i>	<i>Type of power</i>	<i>Duty cyc. [hrs]</i>	<i>Disch. rate [l/s]</i>	<i>Water quality</i>	<i>Dyn. water level [m]</i>	<i>Crit. water level [m]</i>			
1	Mono-type pump	36.00	Electric motor	12	1.00	PENDING	16.00	20.00			
<i>Note:</i>											
 your future in safe hands						Kimopax 546, 16th Road, Constantia Park, Building 3, Midrand, 1685 Tel: 011 3129765					
Page 1											

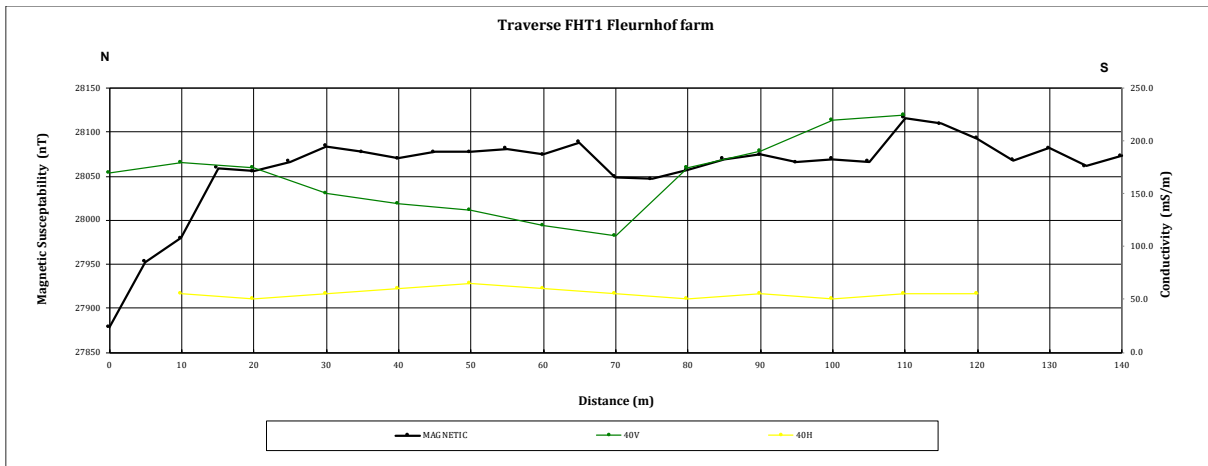
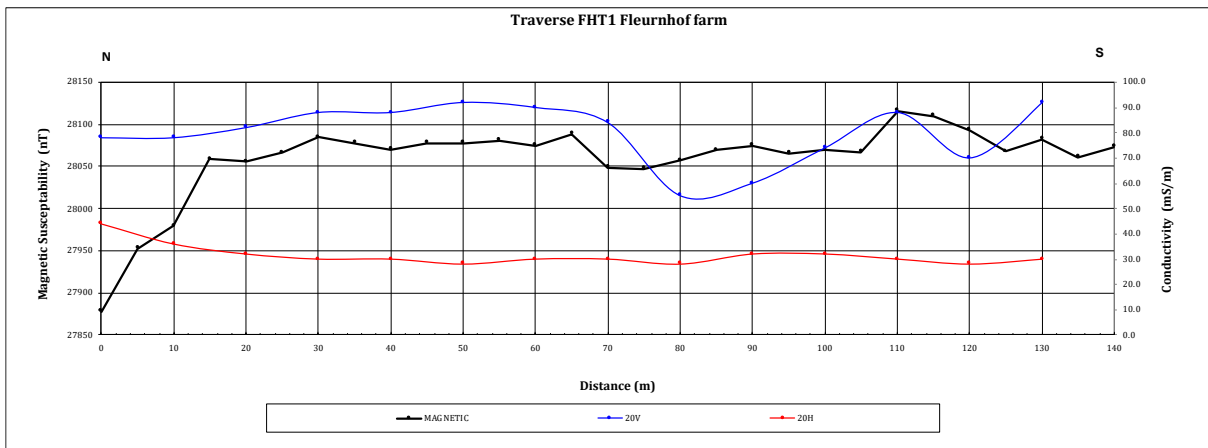
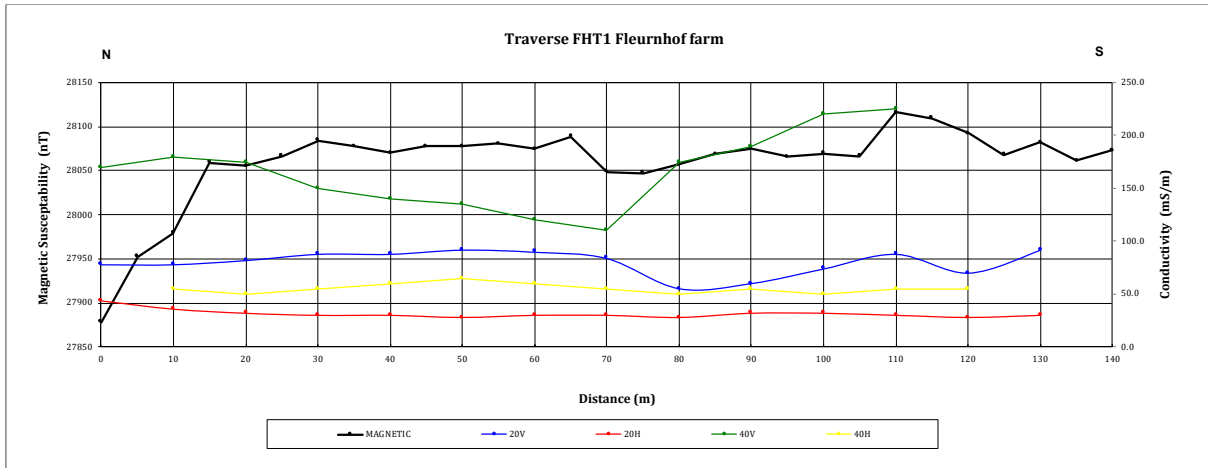
Report for geohydrological assessment at Betrams, Fleurhof and Northern Empowerment Zones
- Gauteng Province

MANAGEMENT RECOMMENDATIONS										Date Compiled: 2021/03/30		
BASIC SITE INFORMATION: <i>Site Identifier:</i> 2627BBK0002 <i>Number:</i> FFBH01 <i>Site Type:</i> Borehole												
<i>Distr./Farm No.:</i> FLEURHOF		<i>Site Name:</i> FLEURHOF										
<i>Latitude [°]:</i> -26.1951400		<i>Alt. No. 1:</i>		<i>Diam. [mm]:</i> 50		<i>Last static water lev. [m]:</i> 40.18						
<i>Longitude [°]:</i> 27.9119900		<i>Alt. No. 2:</i>		<i>Depth [m]:</i> 52.00		<i>Piezometer:</i> 0						
<i>Altitude [m]:</i>		<i>Rep. Inst.:</i> Kimopax (Pty) Ltd		<i>Col. Ht. [m]:</i> 0.00		<i>Date WL meas.:</i> 20210323						
Coordinate System: WGS 84 / Lat/Long												
EXISTING EQUIPMENT:						USE APPLICATION:						
PUMP:			ENGINE:			<i>Site Status:</i> Unused						
<i>Type of Inst.:</i>			<i>Type of Power:</i>			<i>Purpose:</i> Production (water supply)						
<i>Manufacturer:</i>			<i>Manufacturer:</i>			<i>Consumer:</i> Non-urban						
<i>Depth to intk. [m]:</i>			<i>Power Rating [kW]:</i>			<i>Application:</i> Domestic - all purposes						
WATER CHEMISTRY: Standard: SANS 241:2015												
<i>Sample No.:</i>		<i>Date sampled:</i>		<i>Depth sampl. [m]:</i>		<i>Comment:</i>						
Chemical and Physical Parameters:				Bacteriol. Parameters:				Calculated Parameters:				
<i>pH:</i>		<i>Na:</i>		<i>Cl:</i>		<i>E. Coli:</i>		<i>Langelier:</i>				
<i>EC [mS/m]:</i>		<i>K:</i>		<i>NO3 as N:</i>		<i>Faec. Col.:</i>		<i>Aggr. Index:</i>				
<i>TDS:</i>		<i>Si:</i>		<i>SO4:</i>		<i>Total Col.:</i>		<i>Ion Bal. Err. [%]:</i>				
<i>Tot. Alk.:</i>		<i>Al:</i>		<i>F:</i>		<i>SPC:</i>		<i>Tot. Hardness:</i>				
<i>Ca:</i>		<i>Fe:</i>						<i>SAR:</i>				
<i>Mg:</i>		<i>Mn:</i>										
Concentrations in [mg/l] where applicable Bacteriological parameters in [counts/100ml]												
TESTING DETAILS:												
<i>Description</i>	<i>Date</i>	<i>Durat. [min]</i>	<i>Depth to intk. [m]</i>	<i>Disch. rate [l/s]</i>	<i>Drawd. [m]</i>	<i>Recovery [m]</i>	<i>%</i>	<i>[min]</i>	<i>T [m³/d]</i>	<i>Storage</i>	<i>Spec. capac.</i>	<i>Comment</i>
CALIB TEST 1	20210323	15	50.00	0.20	8.61							
CALIB TEST 2	20210323	1	50.00	0.40	9.82	9.67	98.0	90				
												
								Kimopax 546, 16th Road, Constantia Park, Building 3, Midrand, 1685 Tel: 011 3129765				
Page 1												

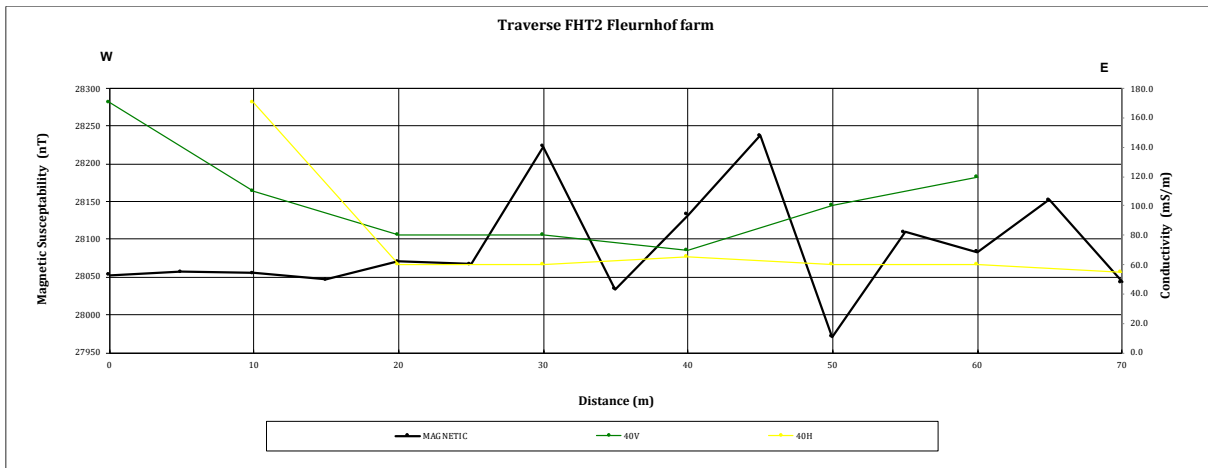
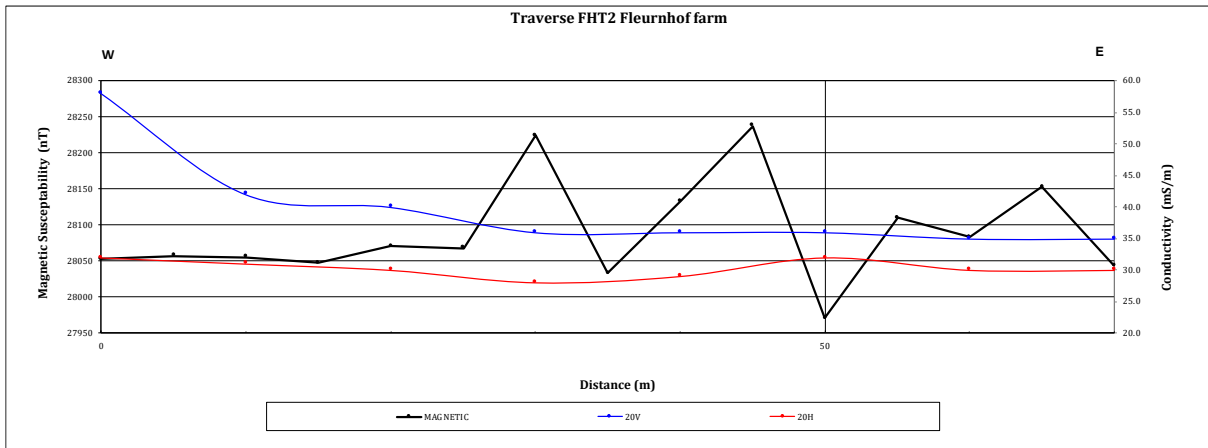
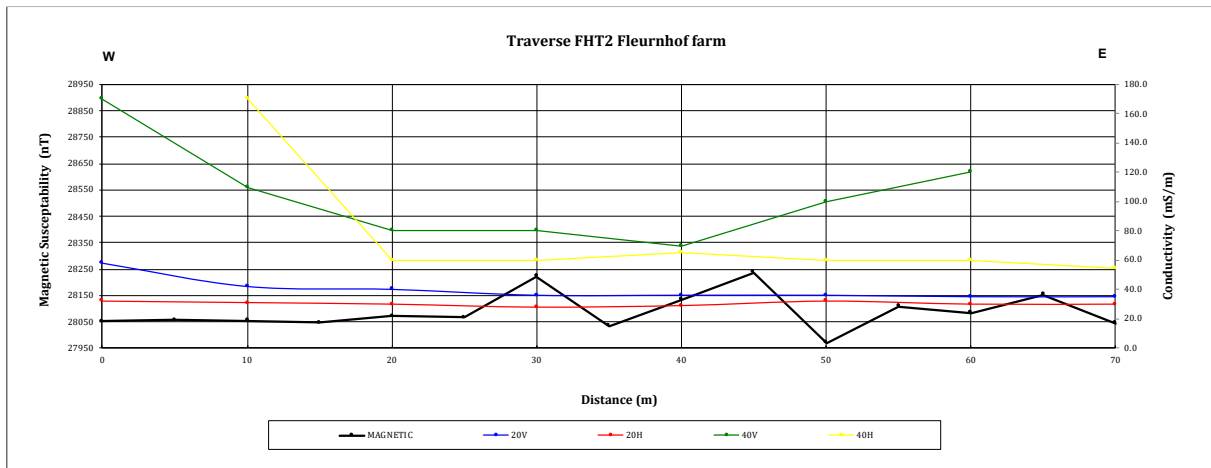
APPENDIX E:

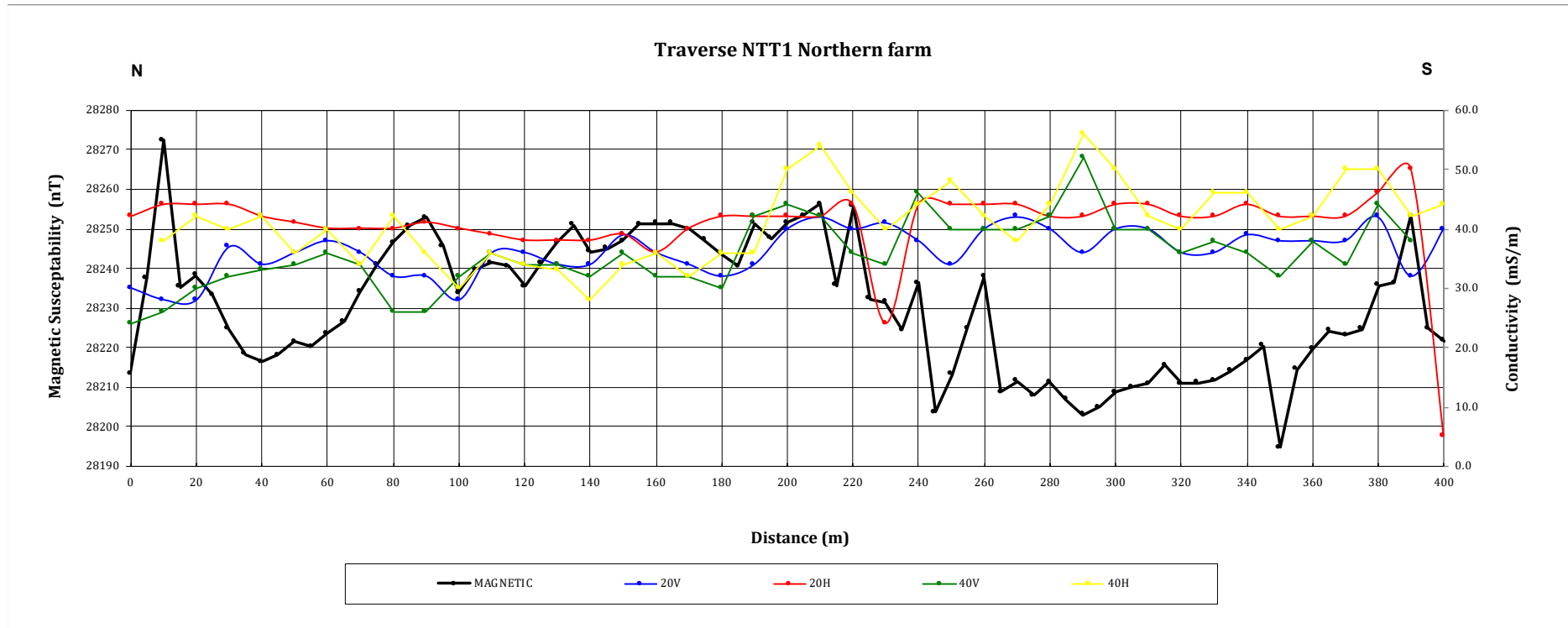
Geophysical Profiles

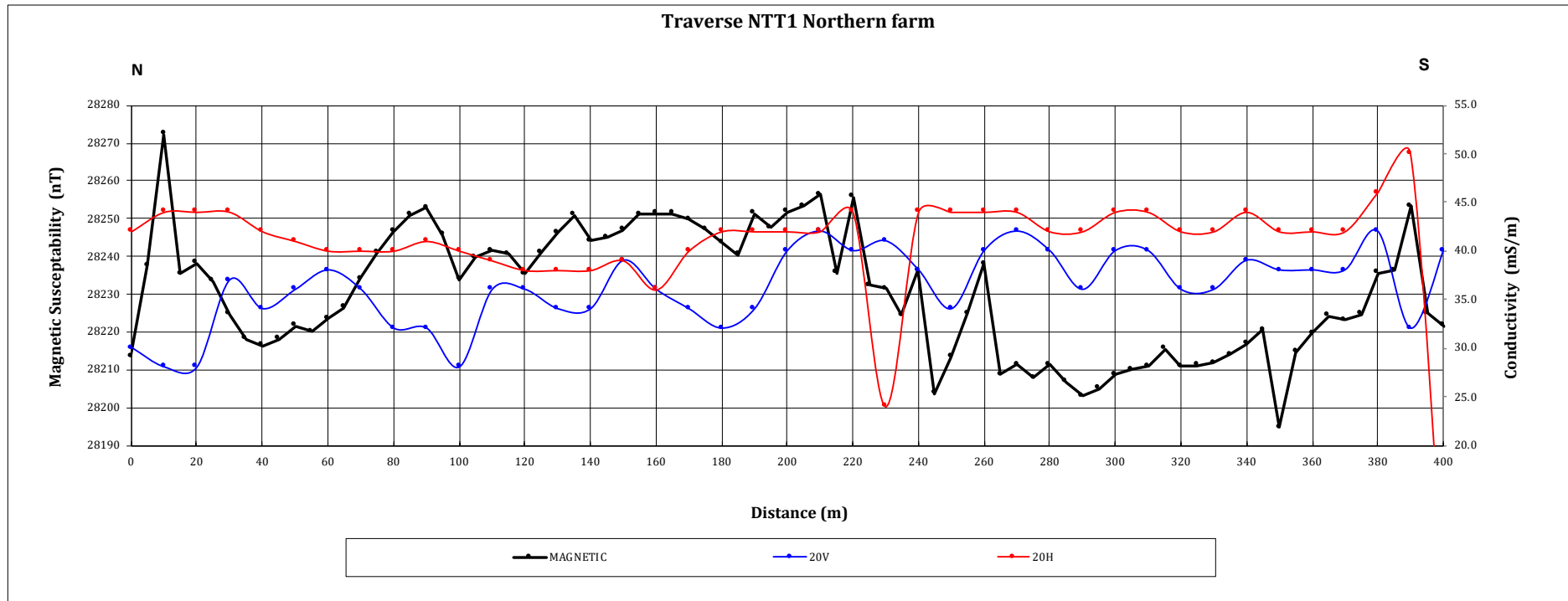
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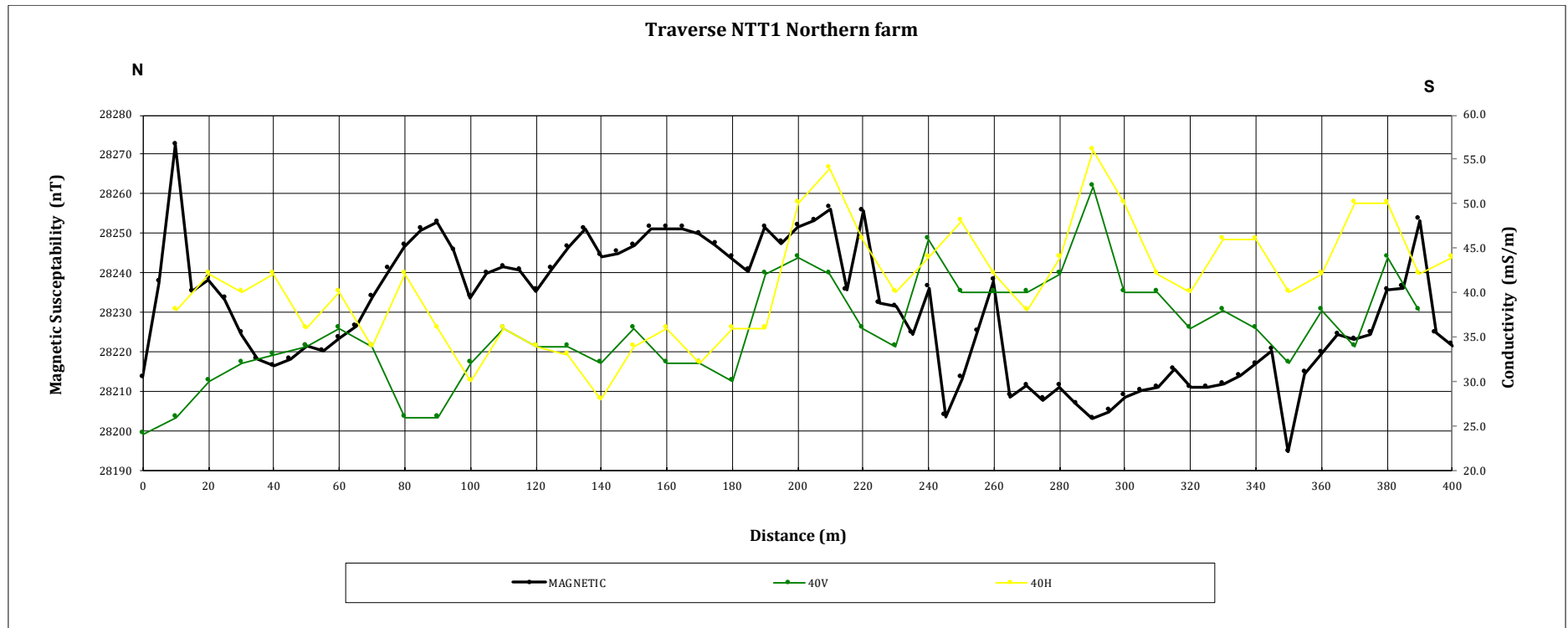


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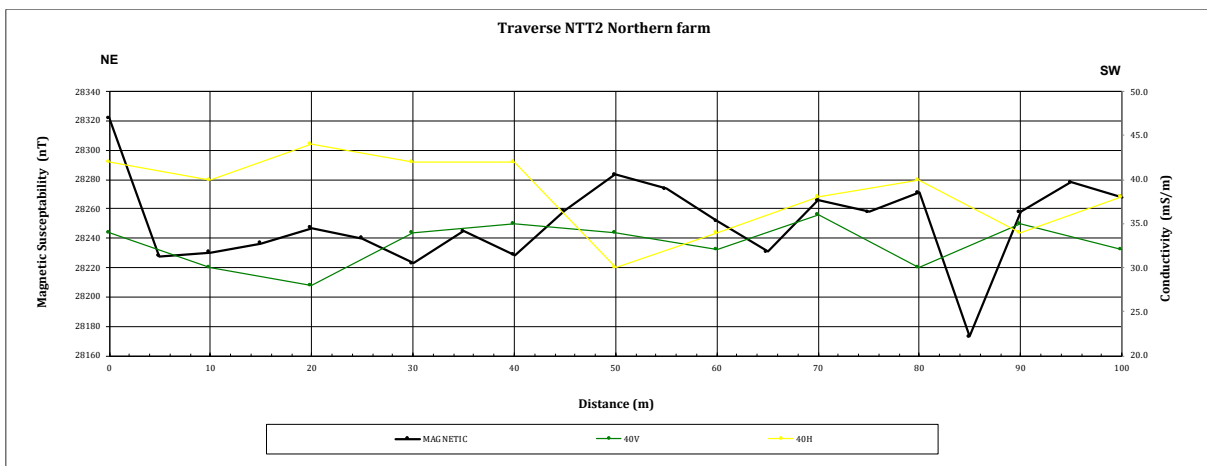
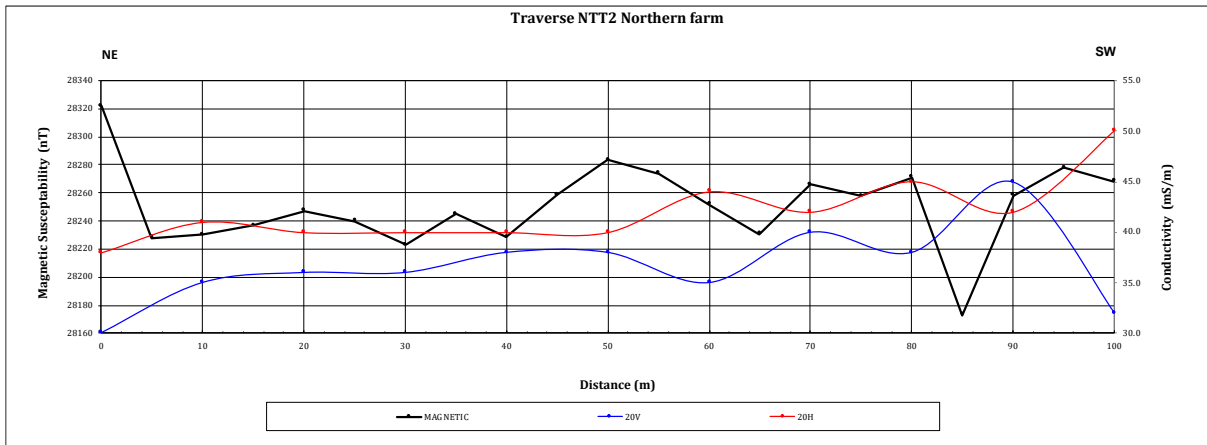
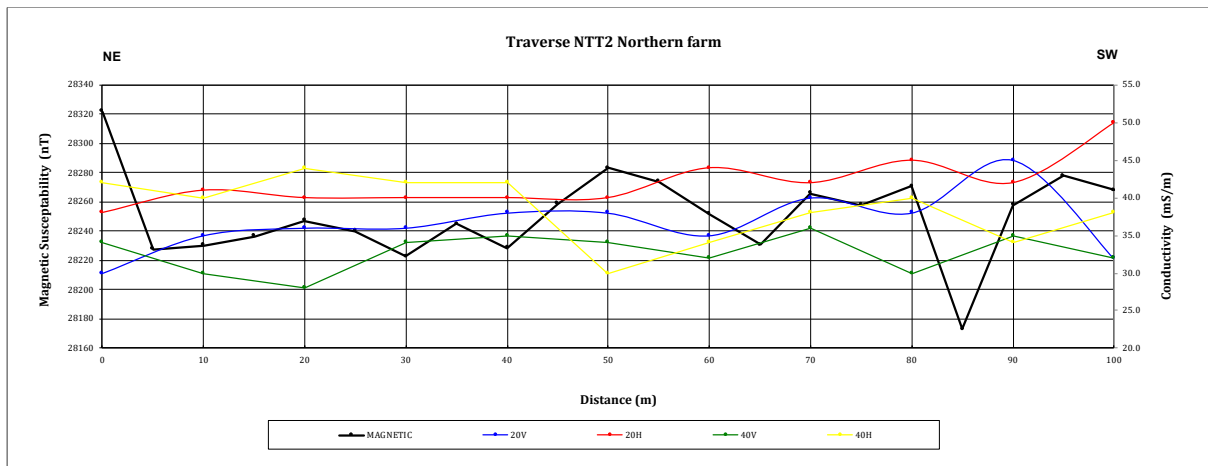








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