



UMKHANYAKUNDE DISTRICT MUNICIPALITY

TENDER DOCUMENTATION

FOR THE CONSTRUCTION OF MANGUZI STAR OF THE SEA
WATER PROJECT - ZONE 7B

CONTRACT NO: SCMU 021 2022/2023

TENDERER'S DETAILS:

Company / Firm Name:

Address:

Phone No:

Fax No:

Cellular No:

E-mail Address:

Contact Person:

Tender Amount

(inclusive of VAT):

Prepared by: JG AFRIKA (Pty) Ltd
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HILTON 3245
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UMKHANYAKUNDE DISTRICT MUNICIPALITY

CONTRACT No: SCMU 021 2022/2023

**CONSTRUCTION OF THE MANGUZI STAR OF THE SEA
WATER PROJECT ZONE 7B**

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THE TENDER

PART T1: TENDERING PROCEDURES

T1.1 TENDER ADVERT**NOTICE and INVITATION TO TENDER***uMkhanyakude District Municipality*

Invites tenders for

**THE MANGUZI STAR OF THE SEA
WATER PROJECT – ZONE 7B****2015MIGFDC27222049****TENDER: SCMU 021 2022/2023**

This civils contract involves the construction of approximately 8 km of HDPE reticulation network with pipeline diameters ranging from 32mm to 110mm, valve chambers, metered ERF connections, road crossings including horizontal directional drilling, 800 Kl elevated tank at the Manguzi Water Treatment works with associated pipework.

A **compulsory site inspection** will be conducted on **02 May 2023 at 13h00**, Prospective tenderers are to meet at the **uMhlabuyalingana Local Municipality on Main Road R22 KwaNgwanase**, they will be given a tender briefing followed by a site visit. Failure to purchase a tender document and attend the site inspection will result in the immediate disqualification of the tenderer.

Only tenderers who are registered with the CIDB prior to the closing date of tenders, in a contractor grading designation equal to or higher than a grading of **7CE** may tender.

Only prospective tenderers scoring in excess of 70 points for functionality based on the evaluation criteria will be considered for further adjudication.

Tender documents will be available for collection in the e-tender portal www.etender.gov.za on the **26th of April 2023**.

Tender closing time is 12h00 (noon) on 11 May 2023.

Sealed Tenders endorsed “**Tender No. SCMU 021 2022/2023 The Manguzi Star of the Sea Water Project – Zone 7B**” must be deposited in the tender box of **uMkhanyakude District Municipality, Kingfisher Road, Mkuze, 3965** followed by a public opening of the tenders.

Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be accepted.

Queries relating to any of the above may be addressed to: Mr Sizwe Khumalo, tel. (035) 573 8600 or e-mail: sizwek@ukdm.gov.za

Mr MW Nxumalo
Municipal Manager
uMkhanyakude District Municipality

T1.2 TENDER DATA

T1.2.1 General

The Conditions of Tender are the Standard Conditions of Tender as contained in Annexure F of SANS 294 - Construction Procurement Processes, Methods and Procedures. The Standard Conditions of Tender for procurements make several references to the Tender Data for deals 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 for procurement other than disposals. Each item of data given below is cross-referenced to the Standard Conditions of Tender to which it mainly applies.

Clause (SANS 294 Annex. F)	Applicable to this tender
F.1.1	The Employer is the uMkhanyakude District Municipality
F.1.2	The Tender Document consists of the following: TENDER T1: Tendering Procedures T1.1: Tender Notice and Invitation to Tender T1.2: Tender Data T1.3: Preferential Procurement Policy T1.4: Standard Condition of Tender T2: Returnable Documents T2.1: List of Returnable Documents T2.2: Returnable schedules and forms CONTRACT C1.1: Form of Offer and Acceptance C1.2: Contract Data Part 1: Agreements and Contract Data C1.3: Proforma Documentation C1.3.1 Form of Guarantee C1.3.2 Proforma Health & Safety Agreement C1.3.3 Proforma Agreement between the Contractor and local Labour C1.3.4 Agreement with Adjudicator C1.3.5 Pro Forma Notification Form in Terms of OHSA 1993 Part 2: Pricing Data C2.1: Pricing Instructions C2.2: Bill of Quantities Part 3: Scope of Work C3.1: Description of the Works C3.2: Procurement C3.3: Project Specifications C3.3.1. Portion 1: The Works C3.3.2. Portion 2: Variations and additions to standard specifications C3.3.3. Portion 3: Particular Specifications Part 4: Site Information C4.1: Maps, Site information C4.2: Drawing Register Part 5: Annexures A Monthly Labour Engagement register B Monthly Labour Return C Minimum wage rate D Health & safety baseline assessment E Health and Safety Specifications
F.1.4	The Employer's agent is: JG Afrika (Pty) Ltd, P.O Box 794, Hilton, 3245. Tel: (033) 3436700, Fax: (033) 343 6701 The JG Afrika representative is Mr Qiniso Shinga e-mail: shingaq@jgafrika.com
F.2.1	A tender offer may only be submitted if the tenderer satisfies the following: - The tenderer shall sub-contract a minimum of 20% of the contract value to local subcontractors who are: - An EME or QSE

Clause (SANS 294 Annex. F)	Applicable to this tender
	• EME or QSE which has at least 51% black owned • EME or QSE which has at least 51% owned by black youth (from the ages 14 to 35) • EME or QSE which has at least 51% owned by black people who are women • EME or QSE which is at least 51% owned by black people with disabilities • EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships • A co-operative which is at least 51% black owned • EME or QSE which is at least 51% owned by black people who are military veterans; • Or more than one of the categories above. • The method to calculate the contract value to be subcontracted to CPG's is the awarded contract value (incl. VAT) less CPA, contingencies, and provisional sums. • The tenderer has in his employ management and supervisory staff satisfying the requirements of the scope of work for labour-intensive competencies for supervisory and management staff • The tenderer is CIDB registered • The tenderer has a contractor grading designation (CIDB) of 7CE or higher • The tenderer scores a minimum of 70 points for functionality. • Tenders are required to obtain a minimum threshold of seventy (70) percent for locally produced valves and actuators
F.2.7	The arrangement for a compulsory clarification meeting is: Location: uMhlabuyalingana Local Municipality offices on Main Road R22, KwaNgwanase Date: 02 May 2023
F.2.8	Add the following: Accept that failure to request clarification on tender documents in at least 5 working days prior to the closing time stated in the tender data, it shall be deemed that all matters in the tender document are clearly understood. Accept that the Employer or Employers Agent shall not be obligated to respond to any request for clarification of tender documents submitted in less than 5 working days prior to the closing date.
F.2.13	Parts of each tender offer communicated on paper shall be submitted as originals only.
F.2.13/F.2.15	The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are: Location of tender box: The offices of uMkhanyakude District Municipality Physical Address: 13433, Kingfisher Road, Mkuze, 3965 Identification Details: <u>TENDER</u> uMkhanyakude District Municipality Contract No. SCMU 021 2022/2023 Manguzi Star of the Sea Zone 7B TENDERER'S NAME:
F.2.13/F.2.15/F.3.5	A two-envelope procedure will not be followed.
F.2.15	Closing date and time for the submission of tender offer is: 11 May 2023 at 12h00
F.2.15	Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted
F.2.16	The tender offer validity period is 90 days from the tender closing date
F.2.18	Tenderers shall, when requested by the Employer, or the Employer's Representative 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 persons satisfy the eligibility requirements.
F.3.4	The time and location for the opening of the tender offers are: At the offices of uMkhanyakude District Municipality directly after tender closing.
F3.7	Add the following clause:

Clause (SANS 294 Annex. F)	Applicable to this tender
	Accept that failure to submit certificates stated in the Tender Data and failure to complete in full the tender document, shall result in the tender regarded as non-responsive
F.3.11.5	The procedure for evaluation of responsive tender offers is Method 4: In the case of a financial, quality and preferences. The quality criteria and maximum score in respect of each of the criteria are as follows: • Previous Experience = 30 Points • Financial Resources = 20 Points • Experience of Key Personnel = 40 Points • Proposed Programme = 10 Points
F.3.11.6.2	The value of the weighting factor W_1 is 80. Formula 2 shall apply.
F.3.17	Two paper copies of the Signed Contract are to be provided by the Employer.

Determining Functionality**Scoring Quality (Functionality)**

Points for quality must be entered here by the **Tenderer based** on the following Quality Scorecards. **Only Tenderers scoring 70 Points** or more for quality will be considered **eligible to tender**.

Tenderers must supply supporting information to prove points claimed where this is not available in the other Returnable Schedules. If supporting information is not provided that points will be not be included.

Score for Quality

	Criteria	Possible Full Points	Actual Points Obtained
1.	Previous experience	30	S1 =
2.	Financial Resources	20	S2 =
3.	Experience of Key Personnel	40	S3 =
4.	Proposed Programme	10	S4 =
	Total Possible Points	100	Total Points Obtained = % Ta=

1. Criteria 1: Experience applicable to past 10 years only: Maximum Score = 30

Tenderer to list water related projects which were undertaken as a main contractor . Project listed must be selected from those listed in the Relevant Experience, Form G, in the Returnable Documents Section (T2.1).						Score*
	Contract	Value	Reference			
			Name	Organisation	Tel No	
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
Actual Points Obtained (S1) =						

*Points scored with reference to similar projects

Points will be scored to for each water related project that is submitted as per the following:

< R 10 Million	= 0 Points
R 10 to 15 Million	= 1 Points
R 15 to 20 Million	= 2 Points
R 20 to 25 Million	= 3 Points
R 25 to 30 Million	= 4 Points
> R 30 Million	= 5 Points

Note: * Similar work (or project) means construction of bulk water or water reticulation networks.

Appointment letter, Completion Certificate and Client Reference Letter must be submitted for points to be claimed.

2. Criteria: Financial resources (Bank rating): Maximum Score = 20.

2	Score the bankers rating received (See Form L, of the Returnable Documents) to the listing below.	
	Bank Rating	Score
2.1	A - Undoubted for the amount of enquiry	20
2.2	B - Good for the amount of enquiry	17
2.3	C - Good for the amount quoted if applied strictly in the way of business	14
2.3	D - Fair trade for the amount of enquiry	10
2.4	E - Figures considered too high F - Financial Position Unknown G - Dishonour on records H - Frequently Dishonoured	Not eligible to tender
Tenderers bank rating		Score (S2)

3. Criteria: Experience of Key personnel: Maximum Score = 40

	Proposed Key Personnel	Experience*		Points
3.1	Project Manager	Qualified (Y/N)		
		Years of experience		
3.2	Site Agent	Qualified (Y/N)		
		Years of experience		
3.3	Site Supervisor / Foreman	Qualified (Y/N)		
		Years of experience		
3.4	Health & Safety Officer	Qualified (Y/N)		
		Years of experience		
Points obtained (S3)				

*Points allocated for experience

Qualifications for Project Manager, Site Agent and Site Supervisor:

Approved degree or diploma in civil engineering / construction management Yes = 2 point
No = 0 Points

Relevant years of experience:

0 to 5 Years = 3 Point

6 to 10 years = 5 Points

Greater than 11 Years = 8 Points

Qualifications for Health and Safety Officer:

Registered Health and Safety Officer with SACPCMP or in the process to register (proof must be provided) Yes = 2
No = 0

Relevant years of experience:

Less than 1 year = 3 Point

2 to 3 years = 5 Points

Greater than 4 Years = 8 Points

Note: Certified copies of qualifications and Curriculum Vitae (CV) of personnel are to be provided, if not included, points will not be claimed. Certified copies older than three months will not be accepted.

4. Criteria: Adequacy of Contract Programme: Maximum Score = 10

Score the adequacy of the Contract Programme		
	Status	Score
4.1	Very good – all basic tasks are detailed in sequential order, showing all critical activities and key milestones showing all activities in detail with realistic construction periods per task.	10
4.2	Good – all basic tasks detailed in correct sequential order, showing all critical path activities and realistic construction activities per task	8
4.3	Satisfactory – all basic tasks detailed in correct sequential order	6
4.4	Poor – not all basic tasks listed	4
4.5	No programme / inappropriate tasks	0
Score (S4)		

T1.3 MUNICIPAL BID DOCUMENTS**MBD1 PART A****INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE UMKHANYAKUDE DISTRICT MUNICIPALITY					
BID NUMBER:	SCMU 021 2022/2023	CLOSING DATE:	11 May 2023	CLOSING TIME:	12H00
DESCRIPTION	Manguzi Star of the Sea: Zone 7B				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX
SITUATED AT (STREET ADDRESS)

uMkhanyakude District Municipality, Kingfisher Road, Mkuze, 3965					
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
SPECIFIC GOAL LEVEL STATUS (FULL CSD REPORT) [TICK APPLICABLE BOX]	☐ Yes ☐ No				
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER PART B:3]	
TOTAL NUMBER OF ITEMS OFFERED			TOTAL BID PRICE	R	
SIGNATURE OF BIDDER			DATE		
CAPACITY UNDER WHICH THIS BID IS SIGNED					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT	Technical		CONTACT PERSON	Mr Qiniso Shinga	
CONTACT PERSON	Mr S Khumalo		TELEPHONE NUMBER	033 343 6700	
TELEPHONE NUMBER	035 573 8600		FACSIMILE NUMBER	033 343 6701	
FACSIMILE NUMBER	N/A		E-MAIL ADDRESS	shingaq@igafrika.com	
E-MAIL ADDRESS	sizwek@ukdm.gov.za				

PART B**TERMS AND CONDITIONS FOR BIDDING**

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

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

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

B MBD 2**TAX CLEARANCE CERTIFICATE REQUIREMENTS**

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

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

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

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

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

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

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

MBD 3.1**PRICING SCHEDULE – FIRM PRICES**

DESCRIPTION	QUANTITY	AMOUNT
Section A: Preliminary and General		
Section B: Reticulation Pipelines		
Section C: Reticulation Valves and Valve Chambers		
Section D: Reticulation Road and Donga Crossings		
Section E: ERF Connections		
Section F: Pump Station		
Section G: Reservoir		
Section H: Dayworks		
Sub-Total (A)		
Add 10% to Sub-Total A for contingencies		
Add 10% to Sub-Total A for CPA Allowance		
		
	SUB-TOTAL	
	VAT (15%)	
	TOTAL	

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

CONDITIONS OF TENDER

- Price(s) quoted must be valid for at least ninety (90) days from date of offer for evaluation purposes.
- Price(s) quoted must be firm and include VAT
- Tenderers original valid tax clearance certificate must be attached.
- Tender original or certified B-BBEE Certificate must be attached to the document
- Tender documents signed by a person who does not have authority to sign will be disqualified.
- Tenderers who did not complete the compulsory questionnaire, who abuse the employer's supply chain management system will not be conceded
- Non-collusion affidavit to be executed by bidder and submitted with the bid.

MBD 4**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, hareholder²):.....

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**

3.8.1 If yes, furnish particulars.

.....

¹MSCM 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.

² Shareholder" 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.

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

3.9.1 If yes, furnish particulars.....

.....

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

3.10.1 If yes, furnish particulars.

.....

.....

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

3.11.1 If yes, furnish particulars

.....

.....

1.1.1

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

3.12.1 If yes, furnish particulars.

.....

.....

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

3.13.1 If yes, furnish particulars.

.....

.....

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

3.14.1 If yes, furnish particulars:

.....

.....

4. FULL DETAILS OF DIRECTORS / TRUSTEES / MEMBERS / SHAREHOLDERS.

Full Name	Identity Number	State Employee Number

5. I duly confirm that the above information is correct until otherwise advised in writing AND the company undertakes to immediately, in writing on same day of appointment, advise the Municipality immediately if any of its directors/trustees/ members/shareholders assumes appointment as an employee in national, provincial and/or local government AND the company will deregister from the Municipality Supplier Database and cease forthwith from doing business with the Municipality AND the company shall be subject to a penalty of forfeiting all payments for services rendered or products delivered or installed if it fails to immediately disclose in writing the employment of any of its directors/trustees/ members/shareholders in national, provincial and/or local government.

.....
Signature

.....
Date

.....
Capacity

.....
Name of Bidder

MBD 5**DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)**

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

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 any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

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

2.2 If yes, provide particulars.

.....

.....

.....

.....

* Delete if not applicable

***YES / NO**

Prepared by JG Afrika (PTY) Ltd

3 Has any contract been awarded to you by an organ of state during the

T1.3.8

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

MBD 6.1

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

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

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS AND DEFINITIONS

1. GENERAL CONDITIONS

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

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

1.21.2

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

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) Specific goals.

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

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and Specific goals must not exceed	100

1.5 Failure on the part of a bidder to submit the required documents to substantiate the points claimed with the bid, will be interpreted to mean that points for specific goals are not claimed.

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

2. DEFINITIONS

(a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.

“Specific goals” means specific goals as contemplated in section 2(1)(d) of the Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation

of programmes of the Reconstruction and Development Programme as published in *Government Gazette* No. 16085 dated 23 November 1994

- (b) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals.
- (c) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (d) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (e) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (f) **“prices”** includes all applicable taxes less all unconditional discounts;

(G) “PROOF OF B-BBEE STATUS LEVEL OF CONTRIBUTOR” MEANS:

- 1) B-BBEE Status level certificate issued by an authorized body or person;
- 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
- 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (h) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (i) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1 POINTS AWARDED FOR PRICE (the 80/20 or 90/10 preference point systems)

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

80/20	OR	90/10
$Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$	or	$Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$

Where

P_s = Points scored for price of bid under consideration

P_t = Price of bid under consideration

P_{min} = Price of lowest acceptable bid

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

3.2.1 POINTS AWARDED FOR PRICE

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

80/20

OR

90/10

$$P_s = 80 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right) \text{ or } P_s = 90 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)$$

Where

P_s = Points scored for price of bid under consideration

P_t = Price of bid under consideration

P_{max} = Price of highest acceptable bid

4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1 In terms of Regulation 3 (1) an organ of state must, in the tender documents, stipulate the specific goal in the invitation to submit the tender for which a point may be awarded, and the number of points that will be awarded to each goal, and proof of the claim for such goal.

SPECIFIC GOAL	NUMBER OF POINTS FOR (80/20 PREFERENCE SYSTEM)	NUMBER OF POINTS (90/10 PREFERENCE SYSTEM)
1. Enterprise owned by Black people	4	2
2. Enterprise owned by Women	4	2
3. Enterprise owned by Youth	4	2
4. Enterprise owned by Disabled persons	4	2
5. Enterprise owned by SMME'S – QSE and EME	4	2

5. BID DECLARATION

5.1 Bidders who claim points in respect of specific goals must complete the following:

SPECIFIC GOAL	NUMBER OF POINTS FOR (80/20 PREFERENCE SYSTEM)	NUMBER OF POINTS (90/10 PREFERENCE SYSTEM)
1. Enterprise owned by Black people		
2. Enterprise owned by Women		
3. Enterprise owned by Youth		
4. Enterprise owned by Disabled persons		
5. Enterprise owned by SMME'S – QSE and EME		

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 3.1

6.1 Specific goals: = (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 3.1 and must be substantiated by submitting the required documents.

7. DECLARATION WITH REGARD TO COMPANY/FIRM

7.1 Name of
company/firm:.....

7.2 VAT
registration
number:.....

7.3 Company
registration
number:.....

7.4 TYPE OF COMPANY/ FIRM
Y Partnership/Joint Venture / Consortium

☐ One person business/sole propriety
☐ Close corporation
☐ Company
☐ (Pty
) Limited
[TICK
APPLICAB
LE BOX]

7.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

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

7.6 COMPANY CLASSIFICATION

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

7.7 Total number of years the company/firm has been in business:.....

7.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals indicated in paragraphs 1.4 and 5.1 of the foregoing certificates, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 5.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct.
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state

for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and

- (e) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

.....

MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS

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

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

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) make provision for the promotion of local production and content.
- 1.2. Regulation 8.(2) prescribes that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for tenders referred to in paragraph 1.2 above, a two stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286:2011 as follows:

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

Where

x is the imported content in Rand

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

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

The SABS approved technical specification number SATS 1286:2011 is accessible on [http://www.thedti.gov.za/industrial development/ip.jsp](http://www.thedti.gov.za/industrial%20development/ip.jsp) at no cost.

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

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

<u>Description of services, works or goods</u>	<u>Stipulated minimum threshold</u>
Valve Products and Actuators	70%
Electrical and Telecom Cables	90%
Fabricated Structural Steel	100%
Structural Pipework	100%
Reinforcing Bars	100%
Plastic Pipes	100%

3. Does any portion of the goods or services offered have any imported content?

(Tick applicable box)

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

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

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

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

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

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

LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF

**EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY
(CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

IN RESPECT OF BID NO.

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

.....
NB

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

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

- (a) The facts contained herein are within my own personal knowledge.
- (b) I have satisfied myself that:
 - (i) the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286:2011; and
 - (c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E which has been consolidated in Declaration C:

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

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

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

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

SIGNATURE: _____

DATE: _____

WITNESS No. 1 _____

DATE: _____

WITNESS No. 2 _____

DATE: _____

Annex C

Local Content Declaration - Summary Schedule

(C1)

Tender No.

(C2)

Tender description:

(C3)

Designated product(s)

(C4)

Tender Authority:

(C5)

Tendering Entity name:

(C6)

Tender Exchange Rate:

(C7)

Specified local content %

☐

Pula

☐

EU

☐

GBP

Note: VAT to be excluded from all calculations

Calculation of local content					
Tender item no's	List of items	Tender price - each (excl VAT)	Exempted imported value	Tender value net of exempted imported content	Local content % (per item)
(C8)	(C9)	(C10)	(C11)	(C12)	(C15)

Tender summary			
Tender Qty	Total tender value	Total exempted imported content	Total Imported content
(C16)	(C17)	(C18)	(C19)
(C20) Total tender value	R		

(C21) Total Exempt imported content	R
(C22) Total Tender value net of exempt imported content	R
(C23) Total Imported content	R
(C24) Total local content	R
(C25) Average local content % of tender	

Signature of tenderer from Annex B

Date:

SATS 1286.2011

Annex D

Imported Content Declaration - Supporting Schedule to Annex C

Note: VAT to be excluded from all calculations

(D1)	Tender No.	
(D2)	Tender description: Designated Products:	
(D3)	Tender Authority:	
(D4)	Tendering Entity name:	
(D5)	Tender Exchange Rate:	Pula
(D6)		EU R
		GBP R

A. Exempted imported content

Calculation of imported content

Tender item no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)

Summary

Tender Qty	Exempted imported value
(D17)	(D18)

(D19) Total exempt imported value

R

This total must correspond with Annex C - C 21

Summary

[illegible]

2

Summary

[illegible]

2

D. Other foreign currency payments

Calculation of foreign currency payments			
Type of payment	Local supplier making the payment	Overseas beneficiary	Tender Rate of Exchange
(D46)	(D47)	(D48)	(D50)

Local value of payments
(D51)
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party

Signature of tenderer from Annex B

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above
R

This total must correspond with Annex C - C 23

Date:

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
 - b.
 - c. in relation to such system;
 - d. been convicted for fraud or corruption during the past five years;
 - e. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - f. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐

4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

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

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of: _____ that:

(Name of Bidder)

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

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

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

.....

.....

Signature

Date

.....

.....

Position

Name of

Bidder

T1.4 STANDARD CONDITIONS OF TENDER**APPENDIX TO THE TENDER: STANDARD CONDITIONS OF TENDER**

This standardized procurement document complies with the provisions of the CIDB Standard for Uniformity in Construction Procurement as published in Board Notice 136 Government Gazette No. 38960 of 10 July 2015

F.1 General**F1.1 Actions**

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive practices.

F.1.1.2 The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict, and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate.

Note:

1. *A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.*
2. *Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.*

F.1.1.3 The employer shall not seek, and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

F.1.2 Tender Documents

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

F.1.3 Interpretation

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

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

F.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

(a) **conflict of interest** means any situation in which:

- (i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
- (ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
- (iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.

- (b) **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis
- (c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and
- (d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels
- (e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body
- (f) **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

F.1.4 Communication and employer's agent

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

F.1.5 Cancellation and Re-Invitation of Tenders

F.1.5.1 An organ of state may, prior to the award of the tender, cancel a tender if –

- (a) due to changed circumstances, there is no longer a need for the services, works or goods requested; or
- (b) funds are no longer available to cover the total envisaged expenditure; or
- (c) no acceptable tenders are received

F.1.5.2 The decision to cancel a tender must be published in the CIDFB website and in the government Tender Bulletin for the media in which the original tender invitation was advertised.

F.1.6 Procurement procedures

F.1.6.1 General

Unless otherwise stated in the Tender Data, a contract will, subject to F.3.13, be concluded with the tenderer who in terms of F.3.11 is the highest ranked or the tenderer scoring the highest number of tender evaluation points, as relevant, based on the tender submissions that are received at the closing time for tenders.

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the Tender Data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the Tender Data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

F.1.6.2.4 The contract shall be awarded in accordance with the provisions of F.3.11 and F.3.13 after tenderers have been requested to submit their best and final offer.

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

Tenderers shall in the first stage submit technical proposals and, if required, cost parameters around which a contract may be negotiated. The employer shall evaluate each responsive submission in terms of the method of evaluation stated in the Tender Data, and in the second stage negotiate a contract with the tenderer scoring the highest number of evaluation points and award the contract in terms of these conditions of tender.

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the Tender Data, and award the contract in terms of these conditions of tender.

F.2 Tenderer's obligations

F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the Tender Data and the tenderer, or any of his principals, is not under any restriction to do business with employer.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.2.2 Cost of tendering

F.2.2.1 Accept that, unless otherwise stated in the Tender Data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

F.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available tender documents on its website so not incur any costs pertaining to the printing of the tender documents.

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

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

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

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

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

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

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the Tender Data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the Tender Data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the Tender Data.

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

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

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

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

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

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

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

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the Tender Data.

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

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the Tender Data not later than the closing time stated in the Tender Data. Accept that proof of posting shall not be accepted as proof of delivery.

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

F.2.16 Tender offer validity

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

F.2.16.2 If requested by the employer, consider extending the validity period stated in the Tender Data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

F.2.16.4 Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission

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

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the Tender Data.

F.3 The employer's undertakings**F.3.1 Respond to requests from the tenderer**

F.3.1.1 Unless otherwise stated in the Tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

F.3.1.2 Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence:

- (a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- (b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- (c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

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

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

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

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the Tender Data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, number of points claimed for its BBBEE status level and time for completion for the main tender offer only.

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

F.3.5 Two-envelope system

F.3.5.1 Where stated in the Tender Data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the Tender Data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on BBBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

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

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

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

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

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

F.3.9 Arithmetical errors, omissions and discrepancies

F.3.9.1 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

- (a) the gross misplacement of the decimal point in any unit rate;
- (b) omissions made in completing the pricing schedule or bills of quantities; or
- (c) arithmetic errors in:
 - (i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - (ii) the summation of the prices.

F.3.9.2 The employer must correct the arithmetical errors in the following manner:

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

Consider the rejection of a tender offer if the tenderer does not correct or accept the correction of the arithmetical error in the manner described above.

F.3.10 Clarification of a tender offer

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

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the Tender Data.

F.3.11.2 Method 1: Price and Preference

In the case of a financial offer:

- 1) Score tender evaluation points for price
- 2) Score points for BBBEE contribution
- 3) Add the points scored for price and BBBEE.

F.3.11.3 Methods 2: Functionality, Price and Preference

In the case of a financial offer and preferences:

- 1) Score functionality, rejecting all tender offers that fail to achieve the minimum number of points for functionality as stated in the Tender Data.
- 2) No tender must be regarded as an acceptable tender if it fails to achieve the minimum qualifying score for functionality as indicated in the tender invitation.
- 3) Tenders that have achieved the minimum qualification score for functionality must be evaluated further in terms of the preference points systems prescribed in paragraphs 4 and 4 and 5 below.

The 80/20 preference point system for acquisition of services, works or goods up to Rand value of R 1 million.

- 4) (a)(i) The following formula must be used to calculate the points for price in respect of tenders (including price quotation) with a rand value equal to, or above R 30 000 and up to a Rand Value of R 1 000 000 (all applicable taxes included):

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

Where

P_s = Points scored for comparative price of tender offer under consideration;

P_t = Comparative price of tender or offer under consideration; and
 P_{min} = comparative price of lowest acceptable tender or offer.

(4)(a)(ii) An employer of state may apply the formula in paragraph (i) for price quotations with a value less than R 30 000, if and when appropriate:

(4)(b) Subject to subparagraph (4)(c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below:

B-BBEE status level of contributor	Number of points
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

(4)(c) A maximum of 20 points may be allocated in accordance with subparagraph (4)(b)

(4)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph (4)(b) must be added to the points scored for prices as calculated in accordance with Subparagraph (4)(a).

(4)(e) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scored the highest Total number of points

The 90/10 preference points system for acquisition of services, works or goods with a Rand value above R 1 million

(5)(a) The following formula must be used to calculate the points for price in respect for tenders with a Rand value above R 1 000 000 (all applicable taxes included):

$$P_s = 90 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)$$

Where

P_s = Points scored for comparative price of tender offer under consideration;
 P_t = Comparative price of tender or offer under consideration; and
 P_{min} = comparative price of lowest acceptable tender or offer.

(5)(b) Subject to subparagraph (5)(c), points must be awarded to a tender for attaining the B-BBEE status level of contributor in accordance with the table below:

B-BBEE status level of contributor	Number of points
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

(5)(c) A maximum of 10 points may be allocated in accordance with subparagraph (5)(b)

(5)(d) The points scored by tender in respect of B-BBEE contribution contemplated in subparagraph

(5)(b) must be added to the points scored for price as calculated in accordance with subparagraph (5)(a).

(5)(e) Subject to paragraph 4.3.8 the contract must be awarded to the tender who scored the highest total number of points.

F.3.11.6 Decimal places

Score price, preferences and functionality, as relevant, to two decimal places.

F.3.11.7 Scoring Financial Offers

Score price of remaining responsive tender offers using the following formula:

$$N_{FO} = W_1 \times A$$

where: N_{FO} is the number of tender evaluation points awarded for price.

W_1 is the maximum possible number of tender evaluation points awarded for price as stated in the Tender Data.

A is a number calculated using formula and option described in Table F.1 as stated in the Tender Data.

Table F.1: Formula for calculating the value of A

Formula	Basis for comparison	Option 1*	Option 2*
1	Highest price or discount	$A = \left(1 + \frac{(P - P_m)}{P_m} \right)$	$A = \frac{P}{P_m}$
2	Lowest price or percentage commission/fee	$A = \left(1 - \frac{(P - P_m)}{P_m} \right)$	$A = \frac{P_m}{P}$
* P_m is the comparative offer of the most favourable comparative offer. P is the comparative offer of the tender offer under consideration.			

F.3.11.8 Scoring preferences

Confirm that tenderers are eligible for the preferences claimed in accordance with the provisions of the Tender Data and reject all claims for preferences where tenderers are not eligible for such preferences. Calculate the total number of tender evaluation points for preferences claimed in accordance with the provisions of the Tender Data.

F.3.11.9 Scoring functionality

Score each of the criteria and sub criteria for quality in accordance with the provisions of the Tender Data.

Calculate the total number of tender evaluation points for quality using the following formula:

$$N_Q = W_2 \times \frac{S_0}{M_S}$$

where: S_0 is the score for quality allocated to the submission under consideration.

M_S is the maximum possible score for quality in respect of a submission; and

W_2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the Tender Data.

F.3.12 Insurance provided by the employer

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

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any risk and only if the tenderer:

- (a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- (b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- (c) has the legal capacity to enter into the contract,
- (d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 9 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- (e) complies with the legal requirements, if any, stated in the Tender Data, and
- (f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14. Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

- (a) addenda issued during the tender period,
- (b) inclusion of some of the returnable documents, and
- (c) other revisions agreed between the employer and the successful tenderer.

F.3.14.2 Complete the schedule of deviations attached to the form of offer and acceptance, if any.

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the Tender Data, or agreed additional period.

F.3.16.2 After the successful tenderer has been notified of the employer's acceptance of the tender, notify other tenderers that their tender offers have not been accepted.

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender, but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.

F.3.19 Transparency in the procurement process

F3.19.1 The CIDB prescripts require that tenders must be advertised and be a registered on the CIDB i. Tender system

F3.19.2 The employer must adopt a transparency model that incorporates the disclosure and accountability as transparency requirements in the procurement process.

F3.19.3 The transparency model must identify the criteria for selection of projects, project information template and the threshold value of the projects to be disclosed in the public domain at various intervals of delivery of infrastructure projects.

F3.19.4 The client must publish the information on a quarterly basis which contained the following information:

- Procurement planning process
- Procurement method and evaluation process
- Contract type
- Contract status
- Number of firms tendering
- Cost estimate
- Contract title
- Contract firm(s)
- Contract price
- Contract scope of work
- Contract start date and duration
- Contract evaluation reports

F3.19.5 The employer must establish a Consultative which will conduct a random audit in the implementation of the transparency requirements in the procurement process.

F3.19.6 Consultative Forum must be an independent structure from the bid committees.

F3.19.7 The information must be published on the employer's website.

F3.19.8 Record of such disclosed information must be retained for audit purposes.

THE TENDER

PART T2: RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

The Tender Document must be submitted as a whole. All forms must be properly completed as required, and the document shall not be taken apart or altered in any way whatsoever

All the documents that will eventually form part of the contract are listed in the Tender Data. Returnable schedules and forms are included in **T2.2** hereafter.

The list of returnable documents comprises the following:

Returnable schedules included in Part T2 that will be required for Tender Adjudication purposes:

Returnable Schedules Included in Part T2		Page: T2.2.____	Completed
A	RECORD OF ADDENDA TO TENDER DOCUMENTS / NOTICE TO TENDERERS	1	
B	AUTHORITY OF SIGNATORY TO SIGN	2	
C	CERTIFICATE OF ATTENDANCE AT SITE INSPECTION BY TENDERER	3	
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Additional schedules to be provided by Tenderer for Tender Adjudication purposes (**ATTACH TO TENDER DOCUMENT**):

Schedules/Affidavits required from Tenderer	Attached
• ORIGINAL TAX CLEARANCE CERTIFICATE OR APPLICATION FOR TAX CLEARANCE CERTIFICATE • PROOF OF REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) • PROOF OF CONTRACTOR GRADING DESIGNATION OF 7CE OR HIGHER • PROOF OF LABOUR INTENSIVE PROFICIENCY (NQF QUALIFICATIONS OF MANAGEMENT AND SUPERVISORY STAFF RESPONSIBLE FOR THE PROJECT) • ORIGINAL OR CERTIFIED COPY OF B-BBEE CERTIFICATE • CONSTRUCTION PROGRAMME	

- **FAILURE TO SUBMIT THE SCHEDULES/AFFIDAVITS LISTED ABOVE IN ORIGINAL OR CERTIFIED COPY AS STATED AND/OR FAILURE TO COMPLETE AND SIGN THE OFFER PART OF THE AGREEMENT WILL LEAD TO THE IMMEDIATE DISQUALIFICATION OF THE TENDERER**

T2.2 RETURNABLE SCHUDELES AND DOCUMENTS

A RECORD OF ADDENDA TO TENDER DOCUMENTS / NOTICE TO TENDERERS

I/We confirm having received the following communications from the Employer or the Employer's Agent before the submission of this Tender, and all factors that will influence my/our Tender contained in these communications have been taken into account in this Tender Offer.

[illegible]

Signature

Date

B AUTHORITY OF SIGNATORY TO SIGN

I/we*, the undersigned, am/are* duly authorised to sign the Tender on behalf of

.....

by virtue of the Articles of Association/Resolution of the Board of Directors* dated, of which a certified copy is attached to this Tender, or by*

Signature

Name

In his/her capacity as

Date

As Witnesses

1.	Signature:	Name:
2.	Signature:	Name:

* Delete whichever is inapplicable or complete as indicated if none are applicable.

C CERTIFICATE OF ATTENDANCE AT SITE INSPECTION BY THE TENDERER

This is to certify that (*tenderer*)

of (*address*)

..... was represented by the person(s) named below at the compulsory meeting held for all tenderers at (*location*)

..... on (*date*)..... starting at (*time*)

I / We acknowledge that the purpose of the meeting was to acquaint myself / ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for me / us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of person(s) attending the meeting:

Name: Signature:

Capacity:

Name: Signature:

Capacity:

Attendance of the above person(s) at the meeting is confirmed by the Employer's representative/ Employer's Agent representative, namely:

Name: Signature:

Capacity: Date and Time:

Stamp:

D FORM OF INTENT TO PROVIDE A PERFORMANCE BOND / DEED OF SURETY

It is hereby undertaken that a Performance Bond/Deed of Surety drafted in accordance with the pro-forma provided in the Tender Documents (refer to Pro-Forma Documentation) will be provided by the Institution listed below:

Name of Institution.....

Address

Telephone

Signature

Name

Capacity

Date

Confirmed by Institution's Authorised Representative:

Signature(s)

Name (Print)

Capacity

On behalf Institution.....

Date

E SCHEDULE OF PROPOSED SUBCONTRACTORS

I/We hereby notify that it is my/our intention to employ sub-contractor/s to undertake a **minimum of 20% of the Contract value to local CPG sub-contractors.**

The contractor is to indicate the specialist subcontractors he/she intends to use over and above the 20% for local CPG in the below table.

NAME OF SUBCONTRACTOR	WORK TO BE DONE	EXPERIENCE

Signature:

Date:

F SCHEDULE OF CONSTRUCTION EQUIPMENT

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

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

DESCRIPTION (type, size, capacity etc)	QUANTITY	YEAR OF MANUFACTURE

Attach additional pages if more space is required

(b) Details of major equipment that will be hired, or acquired for this contract if my / our tender is accepted

DESCRIPTION (type, size, capacity etc)	QUANTITY	HOW ACQUIRED	
		HIRE/ BUY	SOURCE

Attach additional pages if more space is required

The Tenderer undertakes to bring onto site without additional cost to the Employer any additional plant not listed but which may be necessary to complete the contract within the specified contract period.

SIGNATURE: **DATE:**

G SCHEDULE OF PREVIOUS EXPERIENCE

Tenderers are required to set out in the space below, succinct details of recent *similar* contracts carried out by them. At least five projects should be listed.

An attached list will not suffice unless it contains all the requested information.

Failure to properly comply with this requirement may invalidate the Tender.

	Project 1	Project 2	Project 3
Name of Employer			
Contract No.			
Contract Name			
Name and Address of Employer's Representative for project			
Phone No. for Reference			
Email Address for Reference			
Location of Works			
Nature of Work			
Contract Period			
Completion Date			
Contract Value (Incl. VAT)			

Note: To claim points for Functionality, Appointment Letter, Completion Certificate and Client Reference Letter must be submitted.

Tenderer to listed water related projects that were undertake as the **Main Contractor only**.

	Project 4	Project 5
Name of Employer		
Contract No.		
Contract Name		
Name and Address of Employer's Representative for project		
Phone No. for Reference		
Email Address for Reference		
Location of Works		
Nature of Work		
Contract Period		
Completion Date		
Contract Value (Incl. VAT)		

Note: To claim points for Functionality, Appointment Letter, Completion Certificate and Client Reference Letter must be submitted.

Tenderer to listed water related projects that were undertake as the **Main Contractor only**.

H TAX CLEARANCE CERTIFICATE (PRO FORMA)

(Or attach **Original** Tax Clearance Certificate if available)

IMPORTANT NOTES:

1. The following is an abstract from the Preferential Procurement Regulations 2001 promulgated with the Preferential Policy Framework Act No 5 of 2000:

"Tax clearance certificate

16. No contract may be awarded to a person who has failed to submit an original Tax Clearance Certificate from the South African Revenue Service ("SARS") certifying the taxes of that person to be in order or that suitable arrangements have been made with SARS."

2. The PCC 001 form, Application for Tax Clearance Certificate (in respect of tenders), must be **completed by the tenderer in every detail and submitted to the Receiver of Revenue** where the tenderer is registered for income tax purposes. The Receiver of Revenue will then furnish the tenderer with a Tax Clearance Certificate that will be valid for 6 months from date of issue. **This Tax Clearance Certificate must be submitted in the original with the tender, that is before the closing time and date of the tender.**

Each party to a Consortium/Joint Venture/Sub-contractors must complete a separate Tax Clearance Certificate.

Failure to submit an original and valid Tax Clearance Certificate, or certified copy thereof, will invalidate the tender.

3. Tenderers are required to submit either their original Tax Clearance Certificate or a copy of their Tax Clearance Certificate with SARS Pin Number

SARS Pin No.....

4. Tenderers are required to be registered with the National Treasury Central Suppliers Data Base. Tenders are to provide the following:

CSD Suppliers Number:.....

Registration Reference Number:

I SOUTH AFRICAN REVENUE SERVICE DETAILS

ARE YOU A REGISTERED TAX PAYER?

YES

NO

IF YES, WHAT IS YOUR INCOME TAX NUMBER?

.....

AT WHAT SARS OFFICE ARE YOU REGISTERED?

.....

ARE YOU REGISTERED FOR VAT?

YES

NO

IS YES, WHAT IS YOUR VAT REGISTRATION NO.?

.....

ARE YOU REGISTERED FOR EMPLOYEE'S TAX?

YES

NO

IS YES, WHAT IS YOUR REFERENCE NO.?

.....

AT WHAT SARS OFFICE ARE YOU REGISTERED?

.....

ARE YOU REGISTERED FOR UIF?

YES

NO

IF YES, WHAT IS YOUR REGISTRATION NO.?

.....

AN ORIGINAL (OR CERTIFIED COPY) TAX CLEARANCE CERTIFICATE FROM SARS MUST BE ATTACHED TO THIS PAGE.**FAILURE TO COMPLETE ALL THE DETAILS REQUESTED ON THIS PAGE MAY RESULT IN THE DISQUALIFICATION OF YOUR TENDER.**

J DECLARATION WITH REFERENCE TO REGISTRATION WITH CIDB

I/we understand that failure to register or apply for registration with the Construction Industry Development Board (CIDB) will disqualify me/us from tendering for Government, Provincial and Municipal construction works and I/we declare as follows:

(Name of enterprise tendering)

(Please tick the applicable statement).

1	has registered with the CIDB and that there is no objection to the CIDB disclosing the enterprise's financial, resource and experience grading for Tender Adjudication purposes of this Tender. Proof of registration is attached to this Tender.	
---	---	--

2	has submitted an application to CIDB for the registration and is waiting for the grading assessment. Proof of the application is attached to this Tender.	
---	---	--

3	complies with all the requirements for registration and declares that an application with the CIDB for registration will be submitted within two (2) weeks from the date of this declaration and to do so may result in this Tender being classified as non-responsive.	
---	---	--

4	does not intend submitting an application for registration with the CIDB and it is understood that this could cause this Tender being classified as non-responsive.	
---	---	--

5	CONTRACTOR'S CURRENT REGISTRATION AND CIDB RATING	REGISTRATION	
		CIDB RATING	

Attach proof of CIDB Grading

Signature

Name

Date

K SCHEDULE OF COMPETENT PERSONS

The Tenderer shall, submit the names of all management and supervisory staff that will be employed to supervise Contract. **Please attached CV's, FAILURE TO PROVIDE STAFF CV's AND CERTIFIED COPY'S OF QUALIFICATIONS may invalidate the tender.**

ACTIVITY/DUTY	NAME OF PERSON	QUALIFICATION/S	RELEVANT EXPERIENCE
Project Manager			
Site Agent			
Site Supervisor / Foreman			
Health and Safety officer*			

* It is compulsory for the Health and Safety Officer to be a Registered Construction Health and Safety Officer with SACPCMP

SIGNATURE: DATE:

M STATUS OF CONCERN SUBMITTING TENDER AND TENDERER'S PROFILE**1. GENERAL**

State whether the Tenderer is a company, a partnership, a person or a close corporation by making an X in the appropriate space.

<i>Company</i>	
----------------	--

<i>Partnership</i>	
--------------------	--

<i>Person</i>	
---------------	--

<i>Close Corporation</i>	
--------------------------	--

2. INFORMATION TO BE PROVIDED**2.1 IF THE TENDERER IS A COMPANY**

- a) Affix a certified copy of the Certificate of Incorporation to this page.

.....

- b) List the Directors and each Director's date of appointment

.....

.....

.....

.....

- c) List the Shareholders

.....

.....

.....

.....

- d) List all companies of which your Company is a shareholder

.....

.....

.....

2.2 IF THE TENDERER IS A PARTNERSHIP

- a) Provide the full name and state each partner's share in the partnership

.....

.....

.....

.....

2.3 IF THE TENDERER IS A PERSON

- a) Provide the full name and qualifications of the person

.....

.....

2.4 IF THE TENDERER IS A CLOSE CORPORATION

- a) State each member's share in the closed corporation and affix a certified copy of the Founding Statement of the corporation.

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

2.5 TENDERER'S PROFILE

Insert tenderer's profile. The tenderer's profile, with traceable reference, to include:

- Previous Experience in Civil Engineering Work;
- Expertise, Experience and Resources;
- Capacity to undertake the work and
- Relevant construction equipment to undertake work

Unless this information has been included elsewhere in the tender document

2.6 PHYSICAL ADDRESS OF BUSINESS

.....
.....

2.7 DATE BUSINESS WAS STARTED

.....
.....

.....
SIGNATURE OF TENDERER

.....
DATE

In terms of Clause 5(1)(h) of the OHSA 1993 Construction Regulations 2014 (referred to as "the Regulations" hereafter), a Contractor may only be appointed to perform construction work if the Employer is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act No 85 of 1993 and the Construction Regulations 2014.

To that effect a person duly authorised by the tenderer must complete and sign the declaration hereafter in detail.

Declaration by Tenderer

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act No 85 of 1993 (as amended by the Occupational Health and Safety Amendment Act No 181 of 1993), and the Construction Regulations 2014.
2. I hereby declare that my company has the competence and the necessary resources to safely carry out the construction work under this contract in compliance with the Construction Regulations and the Employer's Health and Safety Specifications.
3. I propose to achieve compliance with the Regulations by one of the following:

(a) From my own competent resources as detailed in 4(a) hereafter: ***Yes / No**

(b) From my own resources still to be appointed or trained until competency is achieved, as detailed in 4(b) hereafter: ***Yes / No**

(c) From outside sources by appointment of competent specialist subcontractors as detailed in 4(c) hereafter: ***Yes / No**

(* = delete whatever is not applicable)

4. Details of resources I propose:

(Note: Competent resources shall include safety personnel such as a construction supervisor and construction safety officer as defined in Regulation 8, and competent persons as defined in Regulations 7, 8, 10, 11, 12, 13, 14, 15, 18, 19, 20, 22, 23, 25, 26, and 28, as applicable to this contract)

- (a) Details of the competent and qualified key persons from my company's own resources, who will form part of the contract team:

NAMES OF COMPETENT PERSONS	POSITIONS TO BE FILLED BY COMPETENT PERSONS

O AMENDMENTS, QUALIFICATIONS AND ALTERNATIVES

(This is not an invitation for amendments, deviations or alternatives but should the Tenderer, desire to make any departures from the provisions of this contract he shall set out his proposals clearly hereunder. The Employer will not consider any amendment, alternative offers or discounts unless forms (a), (b) and (c) have been completed to the satisfaction of the Employer).

I / We herewith propose the amendments, alternatives and discounts. as set out in the tables below:

(a) AMENDMENTS

PAGE, CLAUSE OR ITEM NO	PROPOSED AMENDMENT

[Notes: (1) Amendments to the General and Special Conditions of Contract are not acceptable;
(2) The Tenderer must give full details of all the financial implications of the amendments and qualifications in a covering letter attached to his tender.

(b) ALTERNATIVES

PROPOSED ALTERNATIVE	DESCRIPTION OF ALTERNATIVE

[Notes: (1)..Individual alternative items that do not justify an alternative tender, and an alternative offer for time for completion should be listed here.
(2) In the case of a major alternative to any part of the work, a separate Bill of Quantities, programme, etc, and a detailed statement setting out the salient features of the proposed alternatives must accompany the tender.
(3) Alternative tenders involving technical modifications to the design of the works and methods of construction shall be treated separately from the main tender offer.

(c) DISCOUNTS

ITEM ON WHICH DISCOUNT IS OFFERED	DESCRIPTION OF DISCOUNT OFFERED

[Note: The Tenderer must give full details of the discounts offered in a covering letter attached to his tender, failing which, the offer will be prejudiced]

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

DATE:

P DECLARATION OF INTEREST

1. Any legal person, including persons employed by the Purchaser/Employer, or persons having a kinship with persons employed by the Purchaser/Employer, including a blood relationship, may make an offer or offers in terms of this invitation to tender. In view of possible allegations of favouritism, should the resulting tender, or part thereof, be awarded to persons employed by the Purchaser/Employer, or to persons connected with or related to them, it is required that the tenderer or his/her authorized representative declare his/her position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest, where

- the tenderer is employed by the Purchaser/Employer; and/or
- the legal person on whose behalf the tender document is signed, has a relationship with persons / a person who are / is involved in the evaluation and or adjudication of the tender, or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the tender.

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

2.1 Is/Are any person/s connected with the tenderer, employed by the Purchaser/Employer? YES / NO

2.1.2 If so, state particulars:

.....

.....

2.2 Do you, or any person connected with the tenderer have any relationship (family, friend, other) with a person employed by the Purchaser/Employer and who may be involved with the evaluation and or adjudication of this tender? YES/NO

2.2.1 If so, state particulars:

.....

.....

2.3 Are you or any person connected with the tenderer, aware of any relationship (family, friend, other) between the tenderer and any person employed by the Purchaser/Employer who may be involved with the evaluation and or adjudication of this tender? YES/NO

2.3.1 If so, state particulars:

.....

.....

DECLARATION

I, the undersigned,hereby certify that the information furnished in paragraphs 2.1 to 2.3.1 above is correct.

I accept that the Purchaser/Employer may act against me should this declaration prove to be false.

.....
Signature

.....
Date

.....
Position

.....
Name of Tenderer

Q VAT REGISTRATION CERTIFICATE

The tenderer's VAT Registration Certificate to be inserted.

R WORKMENS COMPENSATION: LETTER OF GOOD STANDING (PRO FORMA)

(Tenderer's Details).....

.....

.....

.....

.....

(Date).....

**LETTER OF GOOD STANDING
COMPENSATION FOR OCCUPATIONAL INJURIES & DISEASES ACT, 1993**

ATTENTION:.....

Dear Sirs

In terms of Section.....of the Act, we confirm that, for the period ending

.....

(Tenderer's Details).....

.....

carrying on the business of

are insured with the Company under Policy Number.....

and their standing with the Compensation Fund is.....

The Compensation Commissioner's Reference Number being.....

Yours Faithfully

.....

A letter of current Good Standing received from Workmens Compensation may be submitted with the tender.

S B-BBEE VERIFICATION CERTIFICATE

Certified valid copy of B-BBEE Certificate to be inserted

T CONSTRUCTION PROGRAMME

Construction Program to be inserted to claim points for Functionality.

U FINANCIAL STATEMENTS

Audited Financial Statements to be inserted.

THE CONTRACT

PART C1: AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE**A. OFFER**

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

Contract No: SCMU 021 2022/2023

CONSTRUCTION OF MANGUZI STAR OF THE SEA WATER PROJECT ZONE 7B

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:

R (In words),

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

FOR TENDERER:

Signature:

.....

Name:

.....

Capacity:.....

Name of Tenderer:

Address:

.....

Telephone number: **Fax number:**

Witness:

Signature:

Name:

Date:

[Failure of a Tenderer to sign this form will invalidate the tender]

B. ACCEPTANCE

By signing this part of the 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 Agreement, and Contract Data, (which include this Agreement)
- Part C2 Pricing Data, including the Bill of Quantities
- Part C3 Scope of Work
- Part C4 Site Information

and the schedules, forms, drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

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

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

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

FOR THE EMPLOYER:

Signature:

Name:

Capacity:

Name of Organisation

Address:

.....

Witness:

Signature: **Name:**

Date:

C. SCHEDULE OF DEVIATIONS

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 Tender Data and the Conditions of Tender.

A Tenderer's covering letter will not necessarily 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.

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.

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

1. **Subject:**
Details:
.....
2. **Subject:**
Details:
.....
3. **Subject:**
Details:
.....
4. **Subject:**
Details:
.....
5. **Subject:**
Details:
.....

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

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

FOR THE TENDERER:

Signature:

Name:

Capacity:

Tenderer: *(Name and address of organisation)*
.....

Witness :

Signature:

Name:

Date:

FOR THE EMPLOYER

Signature:

Name:

Capacity:

Employer: *(Name and address of organisation)*
.....

Witness :

Signature:

Name:

Date: ..

C1.2 CONTRACT DATA

C1.2.1 Data Provided by Employer

The **General Conditions of Contract for Construction Works (Third Edition, 2015)**, published by the South African Institution of Civil Engineers, are applicable to this Contract.

Clause	Data Provided by Employer
1.1.1.15 & 1.2.1.2	The Employer is uMkhanyakude District Municipality Contact Person: Mr T Xulu Address: uMkhanyakude District Municipality, Kingfisher Road, Mkuze, 3965 Telephone: 035 573 8600
1.1.1.16 & 1.2.1.2	The Employer's Agent is JG Afrika (Pty) Ltd Contact Person: Mr Qiniso Shinga Address: PO Box 794, Hilton, 3245 Contact details: 033 343 6700 Facsimile 033 343 6701 e-mail: shingaq@jgafrika.com
1.1.1.26	The Pricing Strategy is Re-measurement Contract.
3.2.3	The Employer's Agent is required to obtain the specific approval of the Employer before executing any of the following functions or duties: 1. Issuing instructions for dealing with fossils and the like in terms of Clause 4.7. 2. Authorizing the Contractor to repair and make good excepted risks in terms of Clause 8.2.2.1. 3. Issuing a variation order in terms of Clause 6.3. 4. Granting permission to work during non-working times in terms of Clause 5.8. 5. Approving any extension of time for completion in terms of Clause 5.12. 6. Reducing a penalty for delay in terms of Clause 5.13. 7. Ruling on a contractor's claim in terms of Clause 10.1. 8. Agreeing the adjustment of the sums for general items in terms of Clause 6.11.1.
5.3.1	The Contractor shall commence executing the Works within 21 days from the Commencement Date or upon the approval of the construction permit application. Notwithstanding the above, the Contractor will not be permitted to commence executing the Works before the Form of Guarantee and required insurances and other specified items have been submitted and approved. The Employer will only provide the Contractor access to the site once the Contractor's Health and Safety Plan, required in accordance with Clause 7.(1) of the Construction Regulations, 2014 of the Occupational Health and Safety Act, 1993, has been received and approved by the Employer.
5.3.2	The time to deliver the Guarantee is within 14 days of the Commencement Date. The Guarantee is to contain the wording of the Form of Guarantee document included in the GCC 2015 in Appendix 3. The liability of the guarantee shall be for 10% of the Contract Price.
5.5.1	The time for Practical Completion of the Works is expected to be approximately 18 months
5.6.1	A detailed programme for the execution of the Works shall be delivered to the Engineer within 14 working days of the Commencement Date .
5.8.1	Special non-working days shall be public holidays and the SAFCEC recommended shut down period. Non-working days shall be Sundays.

Clause	Data Provided by Employer																																										
5.12.2.2	Add the following:- Extensions of time for abnormal rainfall shall be determined from the formula below for each calendar month accumulated for the duration of the contract. E = (Nw – Nn) + {(Rw-Rn)/20}, where E = Extension of time Nw = Number of days in the month with rainfall greater than 10mm (from site rainfall records) Nn = Average number of days with rainfall greater than 10mm (from table below) Rw = Recorded rainfall for the month (from site rainfall records) Rn = Average rainfall for the month (from table below) <table><tr><th>MONTH</th><th>N_n</th><th>R_n (mm)</th></tr><tr><td>January</td><td>3</td><td>139</td></tr><tr><td>February</td><td>3</td><td>150</td></tr><tr><td>March</td><td>3</td><td>111</td></tr><tr><td>April</td><td>2</td><td>72</td></tr><tr><td>May</td><td>1</td><td>48</td></tr><tr><td>June</td><td>1</td><td>36</td></tr><tr><td>July</td><td>1</td><td>43</td></tr><tr><td>August</td><td>1</td><td>43</td></tr><tr><td>September</td><td>1</td><td>49</td></tr><tr><td>October</td><td>2</td><td>76</td></tr><tr><td>November</td><td>2</td><td>95</td></tr><tr><td>December</td><td>3</td><td>91</td></tr><tr><td>Total</td><td></td><td>955</td></tr></table> The delay calculated for a given month shall be used to determine the interim extension of time granted for that month. At the end of the applicable period referred to above, the aggregate of the monthly delays will be taken into account for the final determination of time for the contract. If any value of E is negative and its absolute value exceeds Nn, then E shall be taken as equal to minus Nn. The total delay that will be taken into account for the determination of the total extension of time for the contract shall be the algebraic sum of the monthly totals for the period under consideration. If the grand total is negative, the time for completion shall not be reduced on account of abnormal rainfall.	MONTH	N _n	R _n (mm)	January	3	139	February	3	150	March	3	111	April	2	72	May	1	48	June	1	36	July	1	43	August	1	43	September	1	49	October	2	76	November	2	95	December	3	91	Total		955
MONTH	N _n	R _n (mm)																																									
January	3	139																																									
February	3	150																																									
March	3	111																																									
April	2	72																																									
May	1	48																																									
June	1	36																																									
July	1	43																																									
August	1	43																																									
September	1	49																																									
October	2	76																																									
November	2	95																																									
December	3	91																																									
Total		955																																									
5.13.1	The daily penalty for failing to complete the Works by the due completion date shall be R 8 000.																																										
6.8.2	Price adjustments shall be in accordance with the Contract Price Adjustment Schedule included in the GCC 2015 The base month shall be the month prior to the submission of tenders. The values of the coefficients shall be: a=0.20, b=0.20, c=0.55, d=0.05 “L” is the “Labour Index” and shall be the Construction Price Index for the urban area nearest to the Site, as stated in the Contract Data, and as published in the Statistical News Release, all items according to area” of Statistics South Africa. “P” is the “Plant Index” and shall be the Producer Price Index applicable to the appropriate Construction Equipment as stated in the Contract Data and as published in the Statistical Release P0151, Table 4 of Statistics South Africa. “M” is the “Materials Index” and shall be the Producer Price Index applicable to the appropriate materials as stated in the Contract Data and as published in the Statistical release P0151, Table 3 or Table 4 of Statistics South Africa. “F” is the “Fuel Index” and shall be the Producer Price Index for Diesel at wholesale level for the area as stated in the Contract Data and as Published in the Statistical News Release P0151, Table 4 of Statistics South Africa.																																										
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80% of the value of invoices from suppliers.																																										

Clause	Data Provided by Employer
6.10.3	The percentage retention on the amounts due to the Contractor is 10%. The limit of retention is 5% of the Contract Price, including allowances. A guarantee in lieu of retention is not permitted.
6.10.5	The Employer will pay no interest on retention money.
7.8.1	The Defects Liability Period is 12 months.
8.6.1.1.3	The sum insured shall cover Professional Fees amounting to R500 000.
8.6.1.2	A Coupon Policy for Special Risk Insurance is to be issued.
8.6.1.3	The limit of the liability insurance required is R5 000 000 for any single claim with the number of claims unlimited during construction and defects liability period.
8.6.6	The Contractor shall within 14 days from the Commencement Date produce to the Employer/Employer's Agent the relevant policy or policies of insurance.
9.2.1.3	Add the following Clauses after Clause 9.2.1.3.7: 9.2.1.3.8 The Contractor fails to provide the required Guarantee and insurances within the prescribed time; 9.2.1.3.9 The Contractor committed a corrupt or fraudulent act during the procurement process or the execution of the contract. 9.2.1.3.10 An official or other role player committed any corrupt or fraudulent act during the procurement process or in the execution of the contract that benefited the Contractor.
10.5.1	Dispute resolution shall be by Adjudication.
10.5.3	The number of adjudication board members to be appointed is one.

C1.2.2 Contract Data Provided by the Contractor

To be completed after acceptance of Tender.

Clause	Data required
1.1.1.14	Time for Practical completion
1.1.1.9	The Contractor is.....
1.2.1.2	The Contractor's address for receipt of Communications is: Telephone Facsimile e-mail Postal Address Physical address
6.5.1.2.3	The percentage allowance to cover overhead charges shall be as per those stated in the Bills of Quantities.

SIGNED : _____

DATE: _____

C1.3 PROFORMA DOCUMENTATION**C1.3.1 Form of Guarantee**

Appendix 3

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

**PRO FORMA
PERFORMANCE GUARANTEE**

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

GUARANTOR DETAILS AND DEFINITIONS

“Guarantor” means:

Physical address:

“Employer” means:

“Contractor” means.....

“Engineer” means

“Works” means

“Site” means

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

“Contract Sum” means: The accepted amount inclusive of tax of R

Amount in words:

“Guaranteed Sum” means: The maximum aggregate amount of R

Amount in words:

Type of Performance Guarantee:.....(insert variable or fixed)

“Expiry Date” means:..... (Give date)

or any other later date set by the Contractor and / or Employer provided such instruction is received prior to the Expiry Date as indicated here.

CONTRACT DETAILS

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

1. VARIABLE PERFORMANCE GUARANTEE

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

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

R.....

(Amount in words).....

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

R.....

(Amount in words).....

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

2. FIXED PERFORMANCE GUARANTEE

- 2.1. Where a fixed performance Guarantee has been selected, the Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
- 2.2. The Guarantor's period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever comes first.
- 2.3. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3. CONDITIONS APPLICABLE TO VARIABLE AND FIXED PERFORMANCE GUARANTEES

- 3.1. The Guarantor hereby acknowledges that:

- 3.1.1. Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.
- 3.1.2. Its obligation under this Performance Guarantee is restricted to the payment of money.
- 3.2. Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 3.2.1 to 3.2.3:
- 3.2.1. A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 3.2.2;
- 3.2.2. A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 3.2.1 and the sum certified has still not been paid;
- 3.2.3. A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 3.2.

- 3.3. Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this performance Guarantee such demand stating that:
- 3.3.1. The Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up on terms of 3.3; or
- 3.3.2. A provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 3.3; and
- 3.3.3. The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 3.4. It is recorded that the aggregate amount of payments required to be made the Guarantor in terms of 3.2 and 3.3 shall not exceed the Guarantor's maximum liability in terms of 1.1 or 2.1
- 3.5. Where the Guarantor has made payment in terms of 3.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at 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.
- 3.6. Payment by the Guarantor in terms of 3.2 or 3.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 3.7. Payment by the Guarantor in terms of 3.3 will only be made against the return of the original Performance Guarantee by the Employer.
- 3.8. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may consider fit and the Guarantor shall not have the right to claim his release from his Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 3.9. The Guarantor chooses the physical address as stated above for the service of all notices for all purpose in connection herewith.
- 3.10. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2 or 2.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 3.11. This Performance Guarantee, with the required demand notices in terms of 3.2 or 3.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 3.12. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrates Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court if any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date

Guarantor's signatory (1).....

Capacity

Guarantor's signatory (2).....

Capacity

Witness signatory (1)

Witness signatory (2).....

C1.3.2 PROFORMA HEALTH AND SAFETY AGREEMENT

(To be filled out by the successful Tenderer)

AGREEMENT BETWEEN UMKHANYAKUDE DISTRICT MUNICIPALITY (THE EMPLOYER) AND

_____ (THE MANDATORY) AS PROVIDED FOR IN SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT № 85 OF 1993 AND THE CONSTRUCTION REGULATIONS 2014.

I, _____ representing _____ (mandatory) do hereby acknowledge that _____ (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act, No. 85 of 1993, as amended and declare that I am conversant with the requirements. I furthermore agree to, as part of **Contract SCMU 021 2022/2023**:

- (a) comply with the requirements of the Employer as contained in the documents attached hereto (if any),
- (b) perform all work or to use all machinery, plant and equipment in accordance with the provisions of the said Act,
- (c) accept responsibility for the compliance with the said Act by all Subcontractors whether or not selected and/or approved by the Employer, and
- (d) inform the Employer should I or any of my Subcontractors, for whatever reason, be unable to comply with the terms of this agreement, in which case the Employer reserves the right to unilaterally take any steps to enforce this agreement at my cost or to cancel the Contract between us.

Signed for on behalf of the MANDATORY this _____ day of _____ 20__ at _____

Signed for on behalf of the EMPLOYER this _____ day of _____ 20__ at _____

General information for mandatories:

1. The Occupational Health and Safety Act comprises Sections 1 to 50 and Regulations promulgated in terms of the Occupational Safety Act No 85 of 1993, as amended, as well as other Regulations which may be promulgated in terms of the Act.
2. "Mandatory" is defined as including an agent a contractor or a Subcontractor for work, but without derogating from his status in his own right as an employer or user.
3. Section 37 of the Occupational Health and Safety Act potentially punishes employers (principals) for the unlawful acts or omissions of mandatories (contractors) save where a written agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Act by the mandatory.
4. All documents attached to or referred to in the above Agreement form an integral part of the Agreement.
5. To perform in terms of this Agreement, mandatories must be familiar with the relevant provisions of the Act.
6. Mandatories who utilise the services of their own mandatories (Subcontractors) are advised to conclude a similar written Agreement.
7. Be advised that this Agreement places an onus on the mandatory to contact the employer in the event of inability to perform as per this Agreement. The employer, however, reserves the right to unilaterally take any steps as may be necessary to enforce this Agreement.
8. Mandatories are advised that any acts or omissions on the part of the mandatory that are in breach of the Act may cause **Contract № T2021-20** between the Employer and the Mandatory to become invalid.

C1.3.3 PROFORMA AGREEMENT BETWEEN THE CONTRACTOR AND LOCAL LABOUR

***It is recommended that this contract also be available in the local language**

CONTRACT OF EMPLOYMENT

Contract of Employment between the Person employing a task based worker and the task-based worker as described in the Framework Agreement.

1. This is a contract between:.....
(the person responsible for employing a task based worker) and..... (the task based worker)
2. The tasks to be performed will be :
.....
.....
.....on the(describe project)
3. The payment for a completed task is:
(state amount to be paid for each completed task described in 2 above and add any other benefits).
4. Where the task based worker is required to work on a statutory public holiday or Sunday the payment for a completed task will be double the amount stated in the previous paragraph.
5. Maximum hours of work:.....

The task based worker will not be required to work longer than:

- (a) Nine and a quarter hours per day;
- (b) Forty six hours per week;
- (c) On more than six days per week;
- (d) For more than five hours without an interval of at least thirty minutes;
- (e) For a spread-over of more than twelve hours.
6. The task based worker will be paid on a (state the day of the week) at a maximum interval of every two weeks.
7. The task based worker shall be given a statement with each payment on which is recorded:
 - 7.1 The name of the contractor;
 - 7.2 The task based worker's name;
 - 7.3 The number of tasks completed by the task based worker;
 - 7.4 The rate per task;
 - 7.5 The details of any deductions made;
 - 7.6 The actual amount paid to the task based worker and the period in respect of which payment is made.
8. The task based worker shall be entitled to payment when he/she is prevented from working by reasons within the control of the employer of the task based worker. (The task-based worker shall be paid the rate for a completed task for every nine and one quarter hours for which the task worker is prevented from working).
9. No deductions shall be made from the task based worker's remuneration except where the task based worker consents in writing or unless the employer is permitted or required to do so by law or the order of any competent court.
10. The task-based worker shall be supplied with all health and safety equipment required by the Occupation Health and Safety Act free of charge.
11. The employer of the task-based worker must give the task-based worker at least one week's notice of the termination of the contract. If this is not done, the task-based worker must be paid earnings for five completed tasks.
12. It is expected that the task-based worker will be able to work on this project until
[NB: this is not a legal obligation but is included to advise the task-based worker of the likely duration of employment].
13. The employer of a task-based worker undertakes to observe the provision of:
 - 13.1 The relevant sections of the Basic Conditions of Employment Act.
 - 13.2 The Occupational Health and Safety Act № 85 of 1993 as amended;
The Compensation for Occupational Illness and Disease Act (Act № 130 of 1993)
The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Gazette Notice № R63 of 25 January 2002 as contained in the Contract Data.

Signed on behalf of the employer of the task based worker on this..... day of 20..... :

Name Signature Capacity

As Witnesses

1. Signature: _____ Name: _____

2. Signature: _____ Name: _____

Signed on behalf of the employer of the task based worker on this..... day of 20.....:

Name _____ Signature _____ Capacity _____

As Witnesses

1. Signature: _____ Name: _____

2. Signature: _____ Name: _____

C1.3.4 AGREEMENT WITH ADJUDICATOR

This agreement is entered into between:

Adjudication Board Member: Name:.....

Physical Address:.....

Postal Address:.....

E-mail Address:.....

Fax Number:..... Telephone Number:.....

Mobile Number:.....

Contractor: Name:.....

Physical Address:.....

Postal Address:.....

E-mail Address:.....

Fax Number:..... Telephone Number:.....

Mobile Number:.....

Employer: Name:.....

Physical Address:.....

Postal Address:.....

E-mail Address:.....

Fax Number:..... Telephone Number:.....

Mobile Number:.....

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

The Parties entered into a Contract for **Construction of the Manguzi Star of the Sea Phase 2** which provides that a dispute under or in connection with the General Conditions of Contract for Construction Works, Third Edition (2015) must be referred to (*ad-hoc adjudication/standing adjudication*)

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

1. The Adjudication Board Member accepts to perform his duties in accordance with the term of the Contract, the General Conditions of Contract for Construction Works' Adjudication Board Rules and this Agreement
2. The Adjudicator undertakes to remain independent and impartial of the Contractor, Employer and Employer's Agent for the duration of the Adjudication Board proceedings.
3. The Adjudication Board Member agrees to serve for the duration of the Adjudication Board proceedings.
4. The Parties may at any time, without cause and with immediate effect, jointly terminate this Agreement.
5. Unless the Parties agree, the Adjudication Board Member shall not act as arbitrator or representative of either Party in any subsequent proceedings between the Parties under the Contract. No, Party may call the Adjudication Board Member as a witness in any such subsequent proceedings
6. The standing Adjudication Board's duties shall end upon the Adjudication Board Member(s) receiving notice from the Parties of their joint decision to disband the Adjudication Board.
7. The Adjudication Board Member shall be paid in respect of time spent upon or in connection with the adjudication time spent travelling:
 - 7.1. A monthly retainer of R..... for of number of months, and/or
 - 7.2. A daily fee of R..... based on a hour day, and/or

7.3. An hourly fee of R....., and/or

7.4. A non-recurrent appointment fee of R..... which shall be accounted for in the final sums payable.

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

On submission of an invoice for fees and expenses to the Parties, the Parties shall pay the full amount within 28 days of receipt of the invoice. Late payment of such invoice shall attract interest at prime plus 3% points compounded monthly at the prime rate charged by the Adjudication Board Member's bank.

This Agreement is entered into by:

Contractors signature:.....

Contractors Name:.....

Place:..... Date:.....

Employer's signature:.....

Employer's Name:.....

Place:..... Date:.....

Adjudication Board Member's signature:.....

Adjudication Board Member's Name:.....

Place:..... Date:.....

C1.3.5 PRO FORMA NOTIFICATION FORM IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT No. 85 OF 1993) , CONSTRUCTION REGULATIONS 2014

[This form must be completed and forwarded, prior to commencement of work on site, by all Contractors that qualify in terms of Regulation 3 of the Construction Regulations 2003, to the office of the Department of Labour]

(Regulation 4 of the Construction Regulations, 2014)

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

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

2. Principal contractor's compensation registration number:

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

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

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

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

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 8(1).

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 8(2).

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

8. Nature of the construction work:

9. Expected commencement date :

10. Expected completion date:

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

Total: _____ Male: _____ Female: _____

-

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

13. Name(s) of contractors already selected:

Principal Contractor

Date

n/a

n/a

Client's Agent (where applicable)

Date

Client

Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR**
- **TO COMMENCEMENT** OF WORK ON SITE.

THE CONTRACT

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS

1. The General Conditions of Contract, the Contract Data, the Scope of Work, the Standardized Specifications and the Drawings are to be read in conjunction with the Bill of Quantities.
2. For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work as defined in the standard Specifications of the Scope of Work.

Quantity: The number of units of work for each item.

Rate: The payment per unit of work at which the Tenderer tenders to do the work.

Amount: The product of the quantity and the rate tendered for an item.

Lump sum: An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Scope of Work or elsewhere but of which the quantity of work is not measured in units.
3. The quantities set out in the Bill of Quantities are approximate quantities. The quantities of work accepted and certified for payment, and not the quantities given in the Bill of Quantities, will be used to determine payments to the Contractor.

The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment. Work will be valued at the rates or lump sums tendered, subject only to provisions of the Conditions of Contract, of the Standard Specifications and of the Scope of Work.
4. The tendered rates and lump sums shall include full compensation for overheads, profits, incidentals, levies, taxes (except VAT), etc., and for the completed items of work as specified, all in accordance with the Standard Specifications. Full compensation for completion and maintaining (during the maintenance period) the work shown on the drawings and specified in the standard specifications and Scope of Work, and for the risks, obligations and responsibilities specified in the General Conditions of Contract, Contract Data, Standard Specifications and Scope of Work, shall be deemed collectively provided for in the payment items in the Bill of Quantities, except that the quantities in the Bill of Quantities are approximate quantities only.
5. The Tenderer shall fill in a rate or a lump sum for each item where this is provided for, even where no quantities are given. Items against which no rate or lump sum has been entered in the Tender will not be paid for when the work is executed, as payment for such work will be deemed covered by other rates or lump sums in the Bill of Quantities.

If the Tenderer should group a number of items together and tender one lump sum for such group of items, this single tendered lump sum shall apply to that group of items and not to each individual item. Or, should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed nil.

The tendered lump sums and rates shall be valid irrespective of any change in the quantities during execution of the Contract.
6. Work executed will be measured for payment in accordance with the methods described in the Contract documents under the various payment items, notwithstanding any custom of the contrary. Attention is directed to the provisions of the Standard Specifications regarding the mass of the finished work in place that will be taken for payment, excluding any volume or mass of work in excess of that ordered.
7. The short descriptions of the payment items in the Bill of Quantities are given to identify the items and to provide specific details. Reference shall inter alia be made to the drawings, standard specifications, Scope of Work, General Conditions of Contract and Contract Data for more detailed information regarding the extent of the work entailed under each item.
8. The amount of work or the quantities of materials stated in the Bill of Quantities shall not be considered as restricting or extending the amount of work to be done or the quantities of materials to be supplied by the Contractor.
9. The quantities of materials or the amount of work listed in the Schedule of Quantities shall not be regarded as authorisation for the Contractor to order materials or to execute work. The Contractor shall obtain the Engineer's detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.
10. For provisional sums and prime cost sums refer to clause 6.6 of the Conditions of Contract.
11. All rates and sums of money quoted in the Schedule of Quantities shall be in rand and whole cents. Fractions of a cent shall be discarded.
12. The Tenderer shall ascertain the nature of the access to the Site, the quality and nature of the soil conditions as well as existing materials on site and all other matters such as relevant local ordinances etc. which might influence the completion of the Works.
13. The Tenderer shall allow for all obvious items which have not necessarily been specified but which can reasonably be inferred as necessary in order to carry out the Works as specified.
14. Payment for items which are designated to be constructed using labour-intensive methods (either in this schedule or in the Scope of Work) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of Contractor's Equipment to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.
15. An amount for contingencies has been entered in the Schedule of Quantities which will be used in whole or in part for additional work that may be deemed necessary and only as shall be directed in writing by the Engineer. This amount shall be deducted in part or in whole from the final Contract Value if not required.
16. Tenderers are required to allow in their tendered prices for the supply and use of tools, the provision, operation and maintenance of all the Contractor's Equipment, the provision of secure storage facilities for materials supplied by others, the supply of key personnel, the supervision of all labour and workmanship and everything and every service necessary for the construction, completion and maintenance of the Works in the manner required by the Contract and to the entire satisfaction of the Engineer.
17. Tenderers are required to state the rates to be used in evaluating work done on a daywork basis. The rates quoted are to cover site supervision, superintendence, insurances, holidays with pay, travelling allowances, lodging, any other allowances and emoluments, all overhead charges and profit.

Rates for labour are to include for the use and maintenance of hand tools and appliances, non-mechanical Contractor Equipment such as ladders, trestles, stages, bankers, hand pumps, scaffolding and all similar items unless they are used exclusively for day work.

Rates for mechanically operated Contractor's Equipment are to include for Contractor's Equipment operators, consumable stores, fuel and maintenance and will be held to be applicable not only to such Contractor's Equipment as may be available on site, but also to such mechanically operated Contractor's Equipment as may be brought onto site on the written instruction of the Engineer.

Rates for materials are to include for delivery and offloading at the Contractor's main site store, or if material can be delivered directly to the point of operations, for the delivery and unloading at that point.

18. Arithmetical errors found in the Bill of Quantities as a result of faulty multiplication of addition, will be corrected by the Engineer at the tender evaluation stage, as set out in the Conditions of Tender and the Tender Data, clause F3.9.
19. The Tenderer shall enter a rate or lump sum for each item in **BLACK INK**.

C2.2 SCHEDULE OF QUANTITIES	
SECTION	AMOUNT
SECTION A: PRELIMINARY AND GENERAL	
SECTION B: RETICULATION PIPELINES	
SECTION C: RETICULATION VALVES AND VALVE CHAMBERS	
SECTION D: RETICULATION ROAD AND DONGA CROSSINGS	
SECTION E: ERF CONNECTIONS	
SECTION F: PUMP STATION	
SECTION G: RESERVOIRS	
SECTION H: DAYWORKS	
SUB-TOTAL (A)	
Add 10% to Sub-total A for Contingencies	
Add 10% to Sub-total A for CPA Allowance	
SUB-TOTAL (B)	
Add 15% to Sub-total B for VAT	
TOTAL TENDERED AMOUNT (Carried to Offer Page)	

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION A: PRELIMINARY AND GENERAL							
	SANS 1200 A		PRELIMINARY AND GENERAL				
	8.3		<u>FIXED-CHARGE ITEMS</u>				
A. 1	8.3.1		Contractual requirements	Sum	1		
A. 2	PSA 6.2.1		Other fixed charge obligations	Sum	1		
	PSA 6.2.2		Establish facilities on site				
	SANS 1200 AB		<u>Facilities for Engineer</u>				
A. 3	PSA 6.2.2.1/ PSAB 2.2		Engineer's furniture	Sum	1		
A. 4	PSAB 2.1		Project name boards (2 no. of) as per drawing	Sum	1		
	SANS 1200 A		<u>Facilities for Contractor</u>				
A. 5	8.3.2.2		Office, workshop, and stores	Sum	1		
A. 6			Laboratories (and/or external testing allowance)	Sum	1		
A. 7			Living accommodation	Sum	1		
A. 8			Ablution and latrine facilities	Sum	1		
A. 9			Water and electric power supplies	Sum	1		
A. 10			Tools and equipment	Sum	1		
A. 11			Communications	Sum	1		
A. 12			Dealing with Water (Subclause 5.5)	Sum	1		
A. 13			Access (Subclause 5.8)	Sum	1		
A. 14			Other	Sum	1		
	8.4		<u>TIME-RELATED ITEMS</u>				
A. 15	8.4.1		Contractual requirements	Sum	1		
	8.4.2		Operate and maintain facilities on site:				
	PSAB 2.2		Facilities for the Engineer				
A. 16			Engineer's office, furniture, kitchen, ablutions and vehicle shelter	Sum	1		
A. 17	PSAB 4.1		Survey Assistants	Sum	1		
	PSAB 2.2		Facilities for the Contractor:				
A. 18	8.4.2.2		Offices, workshop and storage	Sum	1		
A. 19			Laboratories	Sum	1		
A. 20			Living accommodation	Sum	1		
A. 21	8.4.2.2		Water and electric power supplies	Sum	1		
A. 22			Ablution and latrine facilities	Sum	1		
SECTION A: TOTAL CARRIED TO NEXT PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION A: TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE							
A. 23			Tools and equipment	Sum	1		
A. 24			Communications	Sum	1		
A. 25			Dealing with Water (Subclause 5.5)	Sum	1		
A. 26			Access (Subclause 5.8)	Sum	1		
A. 27	8.4.3		Supervision for the duration of the contract	Sum	1		
A. 28	8.4.4		Company and head office overhead costs	Sum	1		
			<u>Other time-related obligations</u>				
A. 29	8.4.5		General time-related obligations	Sum	1		
A. 30	PSA 6.3.1.1(a)		General Health & Safety obligations	Sum	1		
A. 31	PSA 6.3.1.1(b)		Specific Health & Safety obligations	Sum	1		
A. 32	PSA6.3.1.3		Management of labour-intensive construction	Sum	1		
A. 33	PSA 6.3.1.2		Environmental management in accordance with the EMPr	Sum	1		
	8.5		<u>Provisional Sums stated by the Engineer</u>				
A. 34	PSA 6.4.1		Provision of accredited skills training by specialist service providers	Prov Sum	1	120 000.00	120 000.00
A. 35			Management, overheads, charges and profit on the above item	%	120 000.00		
A. 36	PSA 6.4.3		Project/Community Liaison officer and Project Steering Committee appointed by the Employer	Prov Sum	1	270 000.00	270 000.00
A. 37			Management, overheads, charges and profit on the above item	%	270 000.00		
A. 38	PSA 6.4.7		Survey by nominated surveyor as ordered by the engineer	Prov Sum	1	100 000.00	100 000.00
A. 39			Management, overheads, charges and profit on the above item	%	100 000.00		
A. 40	PSA 6.4.8		Management of Local Emergent Subcontractors	sum	1		
A. 41			Environmental rehabilitation in accordance with Environmental Management Programme (EMPr)	sum	1		
SECTION A: TOTAL CARRIED TO SUMMARY							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION B: PIPELINES							
	SANS 1200DB		EARTHWORKS: PIPE TRENCHES				
	8.3.1		Site Clearance				
B. 1	PSDB 4.3.1.1		Remove vegetation as directed and smaller trees up to 1m girth for a 2m wide strip	m	5220		
B. 2	8.3.1(b)	LI	Remove trees over 1m and up to 2m girth	No.	4		
B. 3	PSDB 4.3.1.2		Clear veld grass and remove topsoil to a nominal depth of 200mm for width of 1m either side of trench centreline. Stockpile, maintain and replace topsoil when trench is backfilled. To be reinstated to same condition prior to construction	m ²	10440		
B. 4	PSC 1.2	LI	Take down and erect existing fences	m	80		
B. 5	PSC 8.2.10	LI	Temporary fencing	m	1000		
	8.3.2		Excavation				
			Excavate in the following materials for trenches, backfill, compact and dispose of surplus material, irrespective of depth using:				
	PSDB 4.3.2		Hand excavation -				
B. 6		LI	Excavation Class 1	m ³	200		
B. 7		LI	Excavation Class 2	m ³	200		
B. 8		LI	Excavation Class 3	m ³	100		
B. 9		LI	Excavation Class 4	m ³	100		
	PSDB 4.3.2		Machine excavation				
			Excavate in all material, backfill, compact and dispose of surplus material, irrespective of depth				
B. 10			Class 1 & 2 excavation	m ³	4698		
B. 11			Class 3 & 4 excavation	m ³	100		
B. 12			Boulder excavation	m ³	100		
B. 13			Hard rock material	m ³	100		
B. 14	8.3.2(c)	LI	Excavate unsuitable material from trench bottom and dispose thereof	m ³	200		
B. 15		LI	19mm Stone Bedding with geofabric wrapping	m ³	100		
	SANS 1200D		Overhaul				
B. 16	8.3.6		a)Limited overhaul (Provisinal)	m ³	510		
B. 17			a)Long overhaul (Provisinal)	m ³ /km	510		
	PSG 6.2.4ii		Overhaul using labor intensive methods of construction				
B. 18		LI	c) Wheel borrow haul	m ³	1500		
B. 19	PSG 3.5	LI	Geofabric	m ²	880		
SECTION B: TOTAL CARRIED TO NEXT PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION B: TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE							-
			EXCAVATION OF PAVED SURFACES				
B. 20		LI	Remove existing kerbing and stockpile	m	300		
B. 21	SANS1200A 8.8.4	LI	Excavation by hand in soft material to expose existing service as ordered by the Engineer	m ³	1000		
			Particular items				
B. 22	8.3.4 (a)	LI	Shore trench where required maximum 2m deep (Provisional)	m	1000		
	SABS 1200 D		EXISTING SERVICES				
B. 23	8.3.8.1 (b)		The use or hire of specialist equipment for detection including use of contractors staff to operate the equipment	hour	80		
	PSDB 4.3.3		Services that intersect a trench -				
B. 24		LI	Cables	No.	100		
B. 25		LI	Water mains up to 300 mm diam.	No.	100		
B. 26			Sewer pipelines and connections	No.	100		
	PSDB 4.3.3		Services that adjoin a trench -				
B. 27		LI	Cables	m	1500		
B. 28		LI	Water mains up to 300 mm diam.	m	1500		
B. 29			Sewer pipelines and connections	m	1500		
	SANS 1200LB		BEDDING				
	8.2.1		Provision of bedding from trench excavation:				
B. 30	(a)	LI	Selected granular fill	m ³	100		
B. 31	(b)	LI	Selected fill material	m ³	100		
	PSLB 4.2.1		Provision of Screened Bedding from Trench Excavation for Pipelines				
B. 32	(a)	LI	Screened selected granular material	m ³	470		
B. 33	(b)	LI	Screened selected fill material	m ³	470		
	8.2.2.3		Provision of bedding from commercial sources:				
B. 34	8.2.2.3(a)	LI	a. Selected granular material	m ³	470		
B. 35	8.2.2.3(b)	LI	b. Selected Fill material	m ³	470		
			Concrete encasing:				
B. 36	PSLB 3.4	LI	Encasing of pipes in Class 15/19 concrete	m ³	8		
	PSL 4.1.1		Supply, Lay, bed and Test Pipes Complete with Couplings / welding and reinstate/rehabilitate ground surface to existing condition. Inclusive of disinfecting				
			HDPE (PE 100) pipes:				
SECTION B: TOTAL CARRIED TO NEXT PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION B: TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE							
B. 37			160mm Ø HDPE PN 10	m	50		
B. 38			110mm Ø HDPE PN 10	m	50		
B. 39			90mm Ø HDPE PN 10	m	30		
B. 40			75mm Ø HDPE PN 10	m	3479		
B. 41			50mm Ø HDPE PN 10	m	344		
B. 42			32mm Ø HDPE PN 10	m	1267		
	PSL 4.1.1		Supply, Lay pipe using the method of Horizontal Directional Drilling, test Pipes Complete with welding and reinstate/rehabilitate ground surface to existing condition. Inclusive of disinfecting				
			HDPE (PE 100) pipes:				
B. 43			160mm Ø HDPE PN 10	m	303		
B. 44			110mm Ø HDPE PN 10	m	407		
B. 45			90mm Ø HDPE PN 10	m	565		
B. 46			75mm Ø HDPE PN 10	m	911		
B. 47			50mm Ø HDPE PN 10	m	100		
B. 48			32mm Ø HDPE PN 10	m	420		
			HDPE PRESSURE BENDS				
	8.2.4 & PH 6.9		EO item for supplying, bedding, jointing / butt welding, testing and disinfecting the following fittings and specials complete. Cutting of pipes and butt-welding included:				
B. 49			160mm Ø 90° HDPE PN 10	No.	1		
B. 50			160mm Ø 45° HDPE PN 10	No.	1		
B. 51			110mm Ø 90° HDPE PN 10	No.	2		
B. 52			110mm Ø 45° HDPE PN 10	No.	3		
B. 53			90mm Ø 90° HDPE PN 10	No.	4		
B. 54			90mm Ø 45° HDPE PN 10	No.	4		
B. 55			75mm Ø 90° HDPE PN 10	No.	5		
B. 56			75mm Ø 45° HDPE PN 10	No.	5		
B. 57			50mm Ø 90° HDPE PN 10	No.	5		
B. 58			50mm Ø 45° HDPE PN 10	No.	10		
SECTION B: TOTAL CARRIED TO NEXT PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION B: TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE							
	8.2.4 & PH 12		E/O PSL 8.2.1 for cutting out (2 cuts) and removing welded pipeline a completed butt-weld including 0.5 m length of pipe on each side for destructive testing, including re-welding of pipe, destructioun test (including transportation) where ordered; for:				
B. 59			160mm Ø HDPE PN 10	No.	1		
B. 60			110mm Ø HDPE PN 10	No.	2		
B. 61			90mm Ø HDPE PN 10	No.	2		
B. 62			75mm Ø HDPE PN 10	No.	2		
B. 63			50mm Ø HDPE PN 10	No.	1		
			FITTINGS AND SPECIALS				
			E/O item for supplying, installing, bedding, joining / butt welding and testing in HDPE for the following fittings and specials complete				
	8.2.4 & PH 12		HDPE EQUAL TEE				
B. 64		LI	160mm HDPE Equal tee	No.	2		
B. 65		LI	110mm HDPE equal tee	No.	3		
B. 66		LI	90mm HDPE compression equal tee	No.	1		
B. 67		LI	75mm HDPE compression equal tee	No.	15		
B. 68		LI	50mm HDPE compression equal tee	No.	5		
	8.2.4 & PH 12		HDPE UNEQUAL TEE				
B. 69		LI	160mm x 110mm HDPE unequal tee	No.	2		
B. 70		LI	160mm x 90mm HDPE unequal tee	No.	1		
B. 71		LI	160mm x 75mm HDPE unequal tee	No.	2		
B. 72		LI	160mm x 50mm HDPE unequal tee	No.	3		
B. 73		LI	110mm x 90mm HDPE unequal tee	No.	3		
B. 74		LI	110mm x 75mm HDPE unequal tee	No.	2		
B. 75		LI	110mm x 50mm HDPE unequal tee	No.	2		
B. 76		LI	90mm x 75mm HDPE compression unequal tee	No.	9		
B. 77		LI	90mm x 50mm HDPE compression unequal tee	No.	1		
B. 78		LI	75mm x 50mm HDPE compression unequal tee	No.	11		
	8.2.4 & PH 12		HDPE REDUCER				
SECTION B: TOTAL CARRIED TO NEXT PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION B: TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE							
B. 79		LI	160mm x 110mm HDPE Reducer	No.	1		
B. 80		LI	160mm x 90mm HDPE Reducer	No.	1		
B. 81		LI	160mm x 75mm HDPE Reducer	No.	2		
B. 82		LI	160mm x 50mm HDPE Reducer	No.	1		
B. 83		LI	110mm x 90mm HDPE Reducer	No.	3		
B. 84		LI	110mm x 75mm HDPE Reducer	No.	1		
B. 85		LI	110mm x 50mm HDPE Reducer	No.	5		
B. 86		LI	90mm x 75mm HDPE Compression reducing coupling	No.	3		
B. 87		LI	90mm x 50mm HDPE Compression reducing coupling	No.	2		
B. 88		LI	75mm x 50mm HDPE Compression reducing coupling	No.	5		
		LI	Supply and instillation of the following end caps complete including joining				
B. 89		LI	90mm compression end cap	No.	3		
B. 90		LI	75mm compression end cap	No.	3		
B. 91		LI	50mm compression end cap	No.	5		
		LI	Special wrapping in corrosive soil				
B. 92	PE 8.2.1		Wrap joints or fittings as ordered with Denso mastic tape or similar approved (100mm wide)	No	25		
	SANS 1200 GA	LI	Thrust / anchor blocks				
B. 93	8.4.3		15 MPa concrete	m ³	9		
B. 94	8.2.1		Rough formwork	m ²	19		
B. 95	8.3.1	B.	Reinforcement	kg	1		
	PSL3.6		Pipeline Route Markers				
B. 96		LI	Supply and install concrete pipe markers 0.3m away from pipe trench as per details on DRG No.: 3233-7B-903	No	100		
	PE 8.5		EROSION PROTECTION				
B. 97		LI	Place and compact erosion protection berms as indicated on site by engineer (5m long x 0.8m wide x 0.3m high)	No	20		
SECTION B: TOTAL CARRIED TO SUMMARY							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION C: VALVES AND VALVE CHAMBERS							
C. 1	PD 8.1		Air Valve Chambers	14			
			Construct air valve (PN16) chamber complete (INCLUDING fittings specials) for the following pipelines as per details DRG No.: 3233-7B-900				
C. 1			160mm Ø HDPE PN 10	No.	1		
C. 2			110mm Ø HDPE PN 10	No.	2		
C. 3			90mm Ø HDPE PN 10	No.	2		
C. 4			75mm Ø HDPE PN 10	No.	7		
C. 5			50mm Ø HDPE PN 10	No.	2		
	PD 8.2		Scour Valve Chambers	12			
			Construct Scour valve (PN16) chamber complete (INCLUDING fittings specials) as per details on DRG No.: 3233-7B-902				
C. 6			160mm Ø HDPE PN 10	No.	1		
C. 7			110mm Ø HDPE PN 10	No.	1		
C. 8			90mm Ø HDPE PN 10	No.	1		
C. 9			75mm Ø HDPE PN 10	No.	6		
C. 10			50mm Ø HDPE PN 10	No.	3		
C. 11	PD 8.3		Isolating Valve Detail	33			
			Construct Isolating valve chamber complete (INCLUDING fittings specials) as per details on Drg No.: 3233-7B-901 & 3233-7B-913				
C. 12			160mm Ø HDPE PN 10	No.	2		
C. 13			110mm Ø HDPE PN 10	No.	4		
C. 14			90mm Ø HDPE PN 10	No.	6		
C. 15			75mm Ø HDPE PN 10	No.	18		
C. 16			50mm Ø HDPE PN 10	No.	3		
			Fire Hydrants	14			
	PSL 4.1.7		Construct fire hydrants complete (concrete works, pipe fittings and the connection to the following reticulation pipes:-) Drg No.: 3233-7B-909				
C. 17			160mm Ø HDPE PN 10	No.	2		
C. 18			110mm Ø HDPE PN 10	No.	3		
C. 19			90mm Ø HDPE PN 10	No.	3		
C. 20			75mm Ø HDPE PN 10	No.	6		
C. 21	PD 8.7 & PD 8.8.1		Keyed - alike locks	No.	73		
	PD 8.6		Marking of chambers				
C. 22	PD 8.7.1		Marking of chambers	No.	73		
SECTION C: TOTAL CARRIED TO SUMMARY							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION D: ROAD & DONGA CROSSINGS							
	PE 8.6		Road Crossings				
	PE 8.6.1		Construct Gravel road crossing complete. Rate to include for all earthworks, cement stabilization and concrete sleeve Pipes, as per Drg No.: 3233-7B-905 for the following pipeline diameters. Provide all necessary warning signboards for traffic accommodation and deviations as per Drg No.: 3233-7B-908				
D. 1			160mm Ø HDPE PN 10	m	17		
D. 2			110mm Ø HDPE PN 10	m	12		
D. 3			90mm Ø HDPE PN 10	m	14		
D. 4			75mm Ø HDPE PN 10	m	79		
D. 5			50mm Ø HDPE PN 10	m	88		
D. 6			32mm Ø HDPE PN 10	m	105		
			Construction of Tar road crossing complete using the method of horizontal directional drilling. Rate is to include HDPE pipeline sleeve, all earthworks, as per Drg No.: 3233-7B-905 for the following pipeline diameters. Provide all necessary warning signboards as per Drg.: 3233-7B-908 .				
D. 7			160mm Ø HDPE PN 10	m	12		
D. 8			110mm Ø HDPE PN 10	m	12		
D. 9			90mm Ø HDPE PN 10	m	12		
D. 10			75mm Ø HDPE PN 10	m	50		
D. 11			50mm Ø HDPE PN 10	m	50		
D. 12			32mm Ø HDPE PN 10	m	420		
	PE 8.4	LI	Buried river and donga crossings as per Drg No.: 3233-7B-906				
D. 13	PE 8.4.1		Chip, wash and broom rock surface where applicable	m ²	0.5		
D. 14	PE 8.4.2		Drill and install R10 dowels into rock complete with Conbextra GP by Fosroc or similar approved	No.	5		
	SANS 1200 GA		Concrete (small works)				
D. 15	8.2.1		Rough formwork	m ²	1		
			Concrete casing				
D. 16	8.2.1.2		Encase pipe in class 20/19 concrete as ordered	m ³	1		
D. 17	PE 8.5.1		Supply and install 1x2x0.3m Reno mattress complete with galvanised basket and geotextile	m ³	25		
D. 18	PE 8.5.2		Supply and install 2x1x1m gabion basket complete with galvanised basket and geotextile	m ³	3		
SECTION D: TOTAL CARRIED TO SUMMARY							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION E: ERF CONNECTIONS							
	SANS 1200 LF	LI	ERF CONNECTIONS (WATER)				
	PSLF 3.1		Provide ERF Connections complete with supply and installation of pipes, ferrules, stop taps, meters, connecting to water main, laying pipe, jointing, backfilling, reinstating, testing and completing the service connection as per drawing drawing 3233-7B-911 complete				
			32mm Dia ERF connection:				
E. 1			Type 1 ERF connection	No.	36		
E. 2			Type 2 ERF connection	No.	7		
E. 3			Type 3 ERF connection	No.	72		
E. 4			Type 4 ERF connection	No.	10		
			80mm Dia ERF connection:				
E. 5			Type 1 ERF connection	No.	6		
E. 6			Type 2 ERF connection	No.	12		
E. 7			Type 3 ERF connection	No.	15		
E. 8			Type 4 ERF connection	No.	18		
			100mm Dia ERF connection:				
E. 9			Type 1 ERF connection	No.	15		
E. 10			Type 2 ERF connection	No.	12		
E. 11			Type 3 ERF connection	No.	18		
E. 12			Type 4 ERF connection	No.	12		
			Supply, installation testing of Saddles				
E. 13			250 mm diameter saddle	No.	5		
E. 14			160 mm diameter saddle	No.	7		
E. 15			110 mm diameter saddle	No.	5		
E. 16			90 mm diameter saddle	No.	8		
E. 17			75 mm diameter saddle	No.	48		
E. 18			50 mm diameter saddle	No.	33		
	PG 8.1		Yard Taps / Standpipe				
E. 19			Supply and construction of standpipe as shown on the detail on drawing 3233-7B-911 complete	No.	120		
SECTION E: TOTAL CARRIED TO SUMMARY							

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ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION F: PUMP STATION							
			Pump Station				
F. 1			Supply and Install mechanical and electrical equipment to pump station for new elevated tank	Prov Sum	1	950 000.00	950 000.00
F. 2			Management, overheads and charges on the above item	%	950 000.00		
SECTION H: CARRIED TO SUMMARY							

ITEM	REFERENC E CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION G - ELEVATED STEEL TANK							
			ELEVATED STEEL TANK				
G. 1			Supply and Install elevated 800 KI steel tank on 20 meter high stand with walkway and landing, complete with and foundation	Prov sum	1	5 500 000.00	5 500 000.00
G. 2			Management, overheads, charges and profit on the above item	%	R 5 500 000.00		
			Elevated tank foundation				
G. 3			Construction of fountation for elevated tank	Prov sum	1	1 800 000.00	1 800 000.00
G. 4			Management, overheads, charges and profit on the above item	%	R 1 800 000.00		
G. 5			Inlet, Outlet, overflow and scour chamber for elevated tank reservoir	Prov sum	1	600 000.00	600 000.00
G. 6			Management, overheads, charges and profit on the above item	%	R 600 000.00		
SECTION E: TOTAL CARRIED TO SUMMARY PAGE							

ITEM	REFERENCE CLAUSE	Labour Intensive	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SECTION H: DAYWORKS							
			Construction Equipment:				
H. 1			175 l concrete mixer	hour	10		
H. 2			Mechanical Excavator	hour	20		
H. 3			TLB	hour	40		
H. 4			Pedestrian roller vibrator	hour	20		
H. 5			Generator	hour	80		
H. 6			Water tanker (10 000 litre)	hour	15		
H. 7			10 ton tip truck	hour	15		
H. 8			3 ton flat-bed truck	hour	10		
H. 9			1 ton bakkie	hour	10		
H. 10			100mm water pump	hour	10		
			Labour:				
H. 11			Working Foreman	hour	20		
H. 12			Working Chargehand	hour	20		
H. 13			Carpenter	hour	20		
H. 14			Steelfixer	hour	20		
H. 15			Concrete hand	hour	20		
H. 16			Bricklayer or Plasterer	hour	20		
H. 17			Manhole builder	hour	20		
H. 18			Pipelayer	hour	20		
H. 19			Plumber	hour	20		
H. 20			Welder	hour	20		
H. 21			Certified Blaster	hour	20		
H. 22			Ganger	hour	40		
H. 23			Semi-skilled Labourer	hour	80		
H. 24			Unskilled Labourer	hour	200		
H. 25			Watch person	hour	100		
			Materials:				
H. 26			Cement in 50kg pockets	pocket	15		
H. 27			Concrete sand	m³	15		
H. 28			Plaster sand	m³	15		
H. 29			20mm Graded crushed stone	m³	15		
H. 30			General purpose bricks	No.	4000		
H. 31			Engineering bricks	No.	4000		
H. 32			Rough sawn SA pine timber	dm³	5		
H. 33			Welding rods	kg	5		
H. 34			Supply of materials at cost price	Prov sum	1	50 000.00	50 000.00
H. 35			Management, overheads, charges and profit on item above	%	50 000.00		
SECTION J: TOTAL CARRIED TO SUMMARY							

THE CONTRACT

PART C3: SCOPE OF WORKS

C3.1 DESCRIPTION OF WORKS**1 Employer's Objectives**

The Employer's objective is to provide a water supply system to the community in Manguzi of the uMkhanyakude District Municipality. This will be achieved by the construction of 8 km of gravity fed reticulation network which will be from a new 750 elevated steel tank at the Manguzi Water Treatment Works.

2 Extent of the Works

The work required under this Contract includes the following:

- 8km of HDPE reticulation pipeline ranging in diameters from 32mm to 160mm
- Air, Scour and Isolating Valve Chambers
- 800 KL elevated steel tank with associated pipework
- Erf metered connections
- Road, River and Donga Crossings, including horizontal directional drilling
- Pipeline ancillaries e.g. pipeline route markers

3 Location of the Works

The uMkhanyakude District Municipality is located along the coast in the far north of the KwaZulu-Natal Province. The district shares international borders with two countries: Mozambique in the north and Swaziland along its north-western boundary. The N2 is a major transport route that runs from south to north through the UKDM, and is the only national road in the region. The R618 is the main road from the N2 to Hlabisa, and the R22 cuts through the coastal plain from Hluhluwe and Kwangwanase.

4 Labour Intensive Construction

An objective of this Contract is the optimum utilization of local resources. One of the methods to be adopted to achieve this objective is through the implementation of labour-intensive construction methods. The contractor will be required to source the bulk of his labour from the local communities through the **labour desk**.

Labour Intensive construction to be in accordance with the Expanded Works Programme (EPWP). The contractor is required to provide all labourer with orange overalls with "EPWP" in black letters on the back of the overalls with the Municipality's logo on the front.

5 Temporary Works

Temporary Works will be required as necessary to facilitate permanent works.

6 Construction Programme

Tenderers must submit with their Tender a construction programme for the works. The Employer's target for the overall practical completion of the works is **18 months**, however the Tenderer must work out the duration required for the contract completion. The preliminary programme submitted with the Tender should be a realistic programme based on the Contractor's knowledge of the work required and the local conditions.

A final comprehensive and detailed construction programme is to be submitted to the Employers Agent within 14 days of the award of the Contract including the anticipated Cash Flow based on this programme.

7 Site Facilities AvailablePotable Water Supply

The Contractor shall make his own arrangements for potable water supply.

Source of Power Supply

The Contractor shall make his own arrangements for electricity supply to the site camp and elsewhere as required for the duration of the Contract.

Contractor's Site Camp and Accommodation

The Employer has identified an area for the site camp and has negotiated use of the land with the relevant landowner and / or relevant authority.

The Employer will not make housing, shelters, or transport available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and transport them to the site.

The "temporary buildings" and fencing are to be neat and presentable and the surrounding area must, at all times, be kept in a neat, clean and orderly condition. The Contractor shall not cut down or damage any trees nor make any excavation without the written permission of the Employers Agent and shall leave the site in a clean condition.

All buildings and fencing provided at the contractor's and Employers Agent's site camps shall remain the property of the Employer at the end of the contract.

8 Site Facilities Required

See Section A

Temporary offices

The Contractor shall provide office assets and items for the Employers Agent as specified in the document.

Laboratory Facilities

Should the contractor want to store concrete cubes on site, a constant temperature water bath will be required. Although certain testing will be required during the construction, a testing laboratory will not be required on site for use by the Employers Agent. Testing and storing of cubes will be carried out with approval of the Employers Agent by an approved and certified compliant commercial laboratory.

Sanitary Facilities

All latrines and disposal of waste shall conform to the requirements of the local Authority and shall be approved by the Employers Agent. All sanitary fees and charges due under the Local Authority or State Health Regulations related to bylaws shall be paid by the Contractor. Throughout the progress of the contract, all latrines shall be maintained by the Contractor in a clean, sanitary condition to the satisfaction of the Employers Agent. The cost of maintenance and disposal shall be deemed to be included in the tendered rates.

Refuse Removal

The Contractor shall be responsible for daily disposal of refuse and waste generated under this Contract. The site shall be kept clean, neat and tidy to the Employers Agent's satisfaction. The cost of refuse disposal shall be deemed to be included in the tendered rates for Site Facilities.

9 Features Requiring Special Attention**9.1) Existing Services****(a) Care, Damage and Protection**

The Contractor shall carry out all his operations so as not to unnecessarily encroach on, or interfere with, trespass on, or damage adjoining lands, buildings, properties, road structures, pipelines, places and things, in the vicinity of the Works and so as not to interfere in any way at any time with the smooth and continuous operation of existing facilities except for periods when interference is planned.

(b) Location of Services

The Contractor is to physically locate all existing services wherever possible to prevent damage to them, before commencing any excavation or other work on site.

As-Built drawings of existing services are not available for the project. If required, the Contractor shall provide specialist equipment to locate cables. All costs for repairs of services damaged through negligence of the Contractor shall be to the Contractor's account.

Where the existing services will be affected by the Contractor's construction activities, their exact position and depths must be defined by exploratory excavation carried out by the Contractor prior to proceeding with construction activities. The Employers Agent's prior approval must be obtained for the proposed method of locating services.

When services have been successfully located, their positions and the method statement that the Contractor proposes to implement for their removal, protection or isolation and tie-in of new services to replace those existing services removed must be submitted to the Employers Agent for approval. Such approval must be obtained from him in writing before the precautionary measures or re-aligning of existing services are implemented prior to construction work which may endanger the services is put in hand.

Notwithstanding approval of proposed protection measures given by the Employers Agent for any services, the Contractor shall bear full responsibility for damage and consequential time or cost implications to himself, the Employer or any other party arising from his negligence or failure to adequately protect services.

In case of uncertainty with services in use, the Employers Agent must be notified of any possible problems, disruptions etc that may arise. Where services may be disrupted, sufficient notice must be given to the Local Authority and the residents, by the Contractor of his intention to commence with the excavation etc and of the duration of disruption that may arise. However, the Contractor shall at all times protect services to the satisfaction of the Employers Agent and shall be responsible for all repairs and replacement of fittings etc to reinstate the service.

(c) Relocating Existing Services

The Contractor may not be required to relocate services that encroach on the proposed works.

9.2) Providing Access

Adequate trench crossings shall be provided by the Contractor at his own cost at all times. Such temporary trench crossings shall be in the form of portable bridges, temporary backfill or other approved means and shall be capable of permitting the safe passage of vehicles of mass not exceeding 2 tons. The Contractor shall also be responsible for maintaining such crossings and for removing them when they are no longer required.

Where affected, roads shall be made safe and re-opened to traffic overnight. Barricades, traffic signs and drums erected according to the requirements of the SA Road Traffic Signs Manual shall be provided by the Contractor to suit specific conditions.

The Contractor shall organize the work in such a manner as to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work included in this Contract. If, as a result of restricted road reserve widths and the nature of the works, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions in order to provide access to the properties.

The Contractor may, with the approval of the Employers Agent, make arrangements with the occupiers of the affected properties to close off a portion of a street, road, footpath or entrance temporarily, provided the Contractor duly notifies the occupiers of the intended closure and its probable duration and shall, as punctually as possible, re-open the route at the prescribed time. Where possible, the road shall be made safe and re-opened to traffic

overnight. Any such closure shall be made by arrangement between the Contractor and the occupiers and shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions.

9.3) Blasting

Blasting may be required under this Contract. However, no blasting will be permitted within 10m of any structure, pipeline or service unless the Contractor can satisfy the Employers Agent that his proposed blasting methods and controls are such that no damage will be caused to the adjoining structure, pipeline or service. The Employers Agent may then ask for vibro recordings to be taken.

Prior to any blasting the contractor shall examine all structures within a 100m radius of the blast area to determine whether visible cracks are present. All structures/properties that display cracks are to be photographed and a dated copy of the photograph delivered to the property owner.

9.4) Facilities for Other Contractors

There are other contracts planned on the site but these contracts will not interfere with the Contractor's work.

9.5) Finishing, Tidying and Site Maintenance

During the progress of the work and upon its completion, the site of the works shall be kept and left in a clean and orderly condition. The Contractor shall at all times store materials and equipment for which he is responsible in an orderly manner, and shall keep the site free from debris and obstruction.

All plastic pipes are to be protected from direct sunlight with 80% shade cloth cover. All steel reinforcement shall be stored off the ground on timber pallets.

Progressive and systematic finishing and tidying will form an essential part of this Contract. On no account must spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others, and in the event of this occurring, the Employer shall have the right to withhold payment for as long as may be necessary, in respect of the relevant Works in the areas(s) concerned, without thereby prejudicing the rights of others to institute claims against the Contractor on the grounds of unnecessary obstruction.

Finishing and tidying shall not be deferred to the end of the Contract. Works will not be certified as complete, until all finishing and tidying for the portion of the Works to be certified as complete, has been fully completed to the satisfaction of the Employers Agent. In this regard, payment for pipelines shall be made to a maximum of 80% pending clearing and tidying to the satisfaction of the Employers Agent, where after the balance will be certified for payment.

All finishing and tidying shall be carried out to the best advantage of the project as a whole and in the closest cooperation with other Contractors.

9.6) Courtesy

In all dealings with the public the Contractor shall bear in mind their right to enjoy the use of the roads and services and access to their properties and that the Employer desires to interfere as little as possible with these rights.

9.7) Protection of Existing Works

The Contractor shall take all the necessary steps to protect any existing works against damage that may arise because of his operations on Site. The Contractor shall bear the cost of the repair of damage to any service, the possible existence of which could reasonably have been ascertained by him in good time.

Where the Contractor is responsible for the cost of repairs carried out by a Service Authority, the Contractor will be billed directly by the Service Authority concerned.

9.8) Protection of the Environment

All surplus material and rubbish arising from construction during and on completion of the contract must be removed from site. Any dumping or disposal of waste must be at a recognised licensed landfill site.

The location of stockpile areas for storing excavated material and of proposed spoil areas for surplus excavated material will be indicated by the Employers Agent. No deviation from these designated areas will be permitted without the written permission of the Employers Agent.

There is an Environmental Management Programme (EMPr) which is to be adhered to at all times.

9.9) Labour Intensive Construction

An objective of this Contract is the optimum utilization of local resources. One of the methods to be adopted to achieve this objective is through the implementation of labour-intensive construction methods. The Contractor is to maximise his construction team's local labour content in this regard. Labour intensive construction is to be in accordance with the EPWP guidelines.

10 Drawings

Any information in the possession of the Contractor which is necessary for the Employers Agent's Representative to complete his "as built" or "record" drawings must be submitted to the Employers Agent's Representative before a Certificate of Completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Employers Agent. The Employers Agent will supply any figured dimensions that may have been omitted from the drawings.

11 Applicable SANS Standards for Constructions Works

The following specifications for civil engineering construction are applicable.

SANS 1200 A	:	General
SANS 1200 AB	:	Engineer's Office
SANS 1200 C	:	Site Clearance
SANS 1200 D	:	Earthworks
SANS 1200 DB	:	Earthworks (Pipe trenches)
SANS 1200 DK	:	Gabions and Pitching
SANS 1200 DM	:	Earthworks (roads, subgrade)
SANS 1200 G	:	Concrete (structural)
SANS 1200 GA	:	Concrete (Small works)
SANS 1200 L	:	Medium pressure pipelines
SANS 1200 LB	:	Bedding (pipes)
SANS 1200 LF	:	ERF Connections (Water)

The term "Project Specifications" appearing in any of the SANS standardised specifications must be replaced with the term "Scope of Work".

Applicable National Standards

i. Building Work

The "Specification of Materials and Methods to be Used (Fourth Revision)" as published by the Department of Public Works shall apply to the portion of the Works specifically associated to building work. This document may be downloaded from the website of the Department of Public Works at www.publicworks.gov.za.

12 Recording of Weather

A rainfall gauge shall be suitably positioned at the Contractors/Employers Agents office establishment and all rainfall shall be measured daily. Readings are to be taken jointly by the Contractor and the Employers Agent and both parties shall sign the rainfall record log to be maintained at the Employers Agents office.

13 Management Meetings

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employers Agent will call for regular meetings to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.

In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc. Proper minutes of these meetings will be kept by the Employers Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

14 Forms for Contract Administration

The Employers Agent shall provide necessary forms where available.

15 Electronic Payments

The Contractor shall provide all required information to the Employer to facilitate electronic payments upon request.

16 Daily Records

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site. The site diary shall be presented DAILY to the Employers Agent's Representative for his confirmation and signature.

17 Bond and Guarantees

The Contractor shall **within two weeks** after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Employer's Agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data.

18 Payment Certificates

Requirements will be in accordance with the Employer's prescriptions.

C3.2 PROCUREMENT**C3.2.1 Preferential Procurement Procedures**

The conditions and requirements of uMkhanyakude District Municipalities preferential procurement policy will apply to this contract.

C3.2.2 Subcontracting**C3.2.2.1 Provisions of Subcontract**

All specialists, merchants, tradesmen and contractors who execute any work or supply any goods, who are nominated or selected by the Employer or the Employers Agent and who are subsequently employed by the Contractor, shall be referred to as Selected Subcontractors.

Selected Subcontractors shall *either*, as directed by the Employer or the Employers Agent, enter into a subcontract with the Contractor that shall contain the following provisions:

- a) In respect of the work or the goods which are the subject of the subcontract, the Selected Subcontractor shall undertake to the Contractor the same obligations and liabilities as are imposed on the Contractor by the terms of the Contract and shall indemnify the Contractor against all obligations whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to discharge such liabilities.
- b) The Selected Subcontractor shall indemnify the Contractor against liability arising from
 - i. failure of the subcontract works to the extent that the design of the works is undertaken by the Selected Subcontractor
 - ii. failure of the goods to the extent that the goods are manufactured and/or supplied by the Selected Subcontractor
 - iii. any negligence by Selected Subcontractor, his agents and employees
 - iv. any misuse by the Selected Subcontractor of any constructional plant, temporary works or materials provided by the Contractor for the purposes of the Contract

OR

- c) The Contractor shall, if so directed in writing by the Employers Agent, enter into a contract with a Selected Subcontractor on terms and conditions stipulated or approved by the Employer, in which case the Employer shall be deemed to have given the indemnities referred to in a) and b).

OR

- d) The Contractor shall, if so directed in writing by the Employers Agent, enter into a contract with a Selected Subcontractor on terms and conditions stipulated or approved by the Employer, in which case the Contractor shall be deemed to provide the indemnities referred to in a) and b) for which the Contractor will be compensated in accordance with the allowances made in the Schedule of Quantities.

C3.2.2.3 Prices and rates subject to approval

Prices or rates set out in the subcontract shall be subject to the Employers Agent's approval.

C3.2.2.4 Replacement of Selected Subcontractor

If any Selected Subcontractor refuses to enter into a subcontract or if for any reason the Contractor shall not be obliged to enter into such a subcontract and elects not to do so, then another Subcontractor shall be selected by the Employer or the Employers Agent. Where applicable, provisions of Sub Clauses (4) (b) and (c) apply.

C3.2.2.5 Cancellation of subcontract

- a) A Selected Subcontractor that defaults in any of the respects referred to in Clause 9.2 of the General Conditions of Contract, entitles the Contractor to cancel the subcontract and the Contractor shall on written instruction from the Employers Agent, do so.
- b) Upon such cancellation, the Employer or the Employers Agent shall select another Subcontractor, and the Contractor shall, engage such a Subcontractor as a Selected Subcontractor to carry out and complete the subcontract works in terms of this clause.
- c) Any difference between the original subcontract sum, as adjusted in terms of the Contract, and the total cost of carrying out and completing the subcontract works shall be to the Employer's account.

C3.2.2.6 Attendance on Subcontractors

The Contractor shall provide adequate superintendence on Selected Subcontractor for the execution and completion of the subcontracted works in terms of the specifications and regulations pertaining to the Contract.

The Contractor shall also, if required in terms of the subcontract, provide materials, constructional plant, transport and training in support of the Selected Subcontractor.

C3.3 PROJECT SPECIFICATION

The Project Specification has been compiled in accordance with the requirements of SANS 0120.

C3.3.1 PORTION 1: THE WORKS

PS 1 GENERAL DESCRIPTION OF PROJECT

The proposed scope of works to provide water reticulation via erf metered connections is as follows:

The work required under this Contract includes the following:

- 8km of HDPE reticulation pipeline ranging in diameters from 32mm to 160mm
- Air, Scour and Isolating Valve Chambers
- 800 KL elevated steel tank with associated pipework
- Erf metered connections
- Road, River and Donga Crossings, including horizontal

PS 2 DESCRIPTION OF THE SITE AND ACCESS

Description of Site:

Refer to section C.4.1: *Site Information* in this document .

Access:

The operation of construction vehicles on existing roads shall be limited to traffic with an axle load not exceeding that allowed by the Road Traffic Ordinance of the authority concerned, or any amendment thereof.

The Contractor, in making use of existing roads for hauling of materials to or from the site, shall be held responsible to clear any spillage caused by his activities on or near the roads by whatever means necessary, within two (2) days of such spillage occurring. No additional payment will be made for the clearance of spillage and all relevant costs will be deemed to be covered under the relevant items.

The Contractor shall confine his operations to the immediate area of the proposed pipeline where work is to be carried out and shall take all necessary precautions to avoid damaging existing services, buildings, roads, fences, etc. The Contractor shall, at his expense, make good any damage to such services and structures.

PS 3 NATURE OF CLIMATE AND TOPOGRAPHY

PS 3.1 Climate

The area is characterised by subtropical climate and falls within the summer rainfall region. The region has mild winters and very hot, humid summers. The coastal areas fall within the subtropical coast region, the northernmost area of the Makathini Flats falls within the subtropical Lowveld, and the Ubombo Mountains is part of the escarpment. Summer temperatures are usually around 30 degrees Celsius, with December to February rising to 40 degrees or over. Winters rarely see temperatures below 17 degrees Celsius. Rainfall occurs primarily between October and March, with highest rainfalls in January. Average rainfall ranges from 670mm- 950mm, however the area is prone to droughts once in seven years.

Average monthly temperatures and rainfall figures for Manguzi are presented in the table below.

MONTH	Avg Max Temp (°C)	Average Rainfall (mm)
January	30.2	139
February	30.7	150
March	30.3	111
April	28.2	72
May	27.4	48
June	25.3	36
July	24.8	43
August	26.4	43
September	28.1	49
October	28.3	76
November	29.1	95
December	30.5	91
Average	28.3	79.42

PS 3.2 Topography

The Umkhanyakude District Municipality area is characterised by a wide range of environments due to diverse underlying geological formations, and numerous incised river catchments. Low lying coastal plains in the east, and the low-lying plains to the west are separated by the Lebombo Mountains. In the north-west the Lebombo Mountains form the border with Swaziland and the western slopes falling steeply to the coastal plain.

PS 3.3 Ground and Sub-Soil Conditions

The soil conditions in the area are generally sandy and lend themselves to the application of labour intensive construction methods for pipeline construction.

No responsibility will be accepted by the Employer or Engineer for any conclusions drawn by Tenderers from the information

supplied and Tenderers must satisfy themselves as to the nature of materials to be excavated under this contract. Tenderers are at liberty to excavate any further trial holes or to carry out other investigations to satisfy themselves as to the nature of the ground that will be encountered in carrying out the Works, provided that they advise the Engineer of their intention to carry out such further trial hole excavations or other investigations so that the necessary safety requirements and community arrangements can be made.

Note: Material other than that obtained from trench or other excavation on site will be available from **commercial sources** only.

The Contractor shall not hold the Employer or the Employers Agent liable for any deviations from the above which may be found on site.

PS 4 DETAILS OF THE CONTRACT

Refer to section C.3.1: *Description of the Works* in this document.

PS 5 Training Programme

Tenderers must submit with their Tender comprehensive details of their proposed training programme for the Works.

The programme must clearly show the following:

- the training proposed by the Contractor for the nominated persons
- the number of trainees in each discipline

PS 6 Site Facilities Available

Refer to section C.4.1: *Site Information* in this document.

PS 7 Site Facilities Required

Refer to section C.4.1: *Site Information* in this document.

PS 8 Accredited training

This Contract includes the provision of accredited training for local community members and emergent Subcontractors and their employees in bricklaying, pipe laying, plumbing and other appropriate building and construction skills. The Contractor shall liaise with the Institutional and Social Development Consultant, appointed by the Employer, as well as the Labour Desk, established by the Employer, to facilitate the selection of trainees and relevant training to be provided. While the Contractor shall endeavour to provide training to as many of the local labour in his employment on the project as possible, the trainees do not necessarily have to be employed by the Contractor. All trainees shall be from the ward the project falls within.

All training planned by the Contractor shall be approved by the Employers Agent prior to the training taking place.

The Contractor shall provide proof of training carried out **before** payment to the Contractor will be approved by the Employers Agent.

PS 9 Length of trenches

Unless otherwise permitted in writing by the Employers Agent, not more than a total of **1000** metres of trench may be open at any one time.

No trench may be left open over the builder's Christmas holiday. The cost of backfilling any trenches before the shut-down period and the re-opening thereof after the shut-down period shall be for the Contractor's account.

PS 10 Imported Bedding Material

Imported bedding material shall be obtained from commercial sources that are legally entitled to abstract and supply such materials. The contractor shall provide evidence that any proposed supplier has all necessary approvals and permits in place prior to supplying material.

PS 11 Labour Based Construction

Labour based construction methods shall be used wherever possible in the execution of the contract. This is an **EPWP Project** and the latest EPWP guidelines must be adhered to at all times. The latest guidelines can be downloaded from the EPWP website on www.epwp.gov.za

PS 12 Applicable standards

The following SANS 1200 specifications for civil engineering construction are applicable.

SANS 1200 A	:	General
SANS 1200 AB	:	Engineer's Office
SANS 1200 C	:	Site Clearance
SANS 1200 D	:	Earthworks
SANS 1200 DB	:	Earthworks (Pipe trenches)
SANS 1200 DK	:	Gabions and Pitching
SANS 1200 DM	:	Earthworks (roads, subgrade)
SANS 1200 G	:	Concrete (structural)
SANS 1200 GA	:	Concrete (Small works)
SANS 1200 L	:	Medium pressure pipelines
SANS 1200 LB	:	Bedding (pipes)
SANS 1200 LF	:	ERF Connections (Water)

PS - Variations to Standard Specifications

PSA	-	General
PSAB	-	Engineer's office
PSC	-	Site Clearance
PSD	-	Earthworks
PSDB	-	Earthworks (Pipe trenches)
PSG	-	Concrete (Structural)
PSL	-	Medium Pressure Pipelines
PSLB	-	Bedding pipes
PSLF	-	ERF Connections (Water)

P - Particular Specifications

PA	-	Occupational Health & Safety
PB	-	Labour Intensive Construction
PC	-	Building Work (General)
PD	-	Valves Meters & Chambers
PE	-	Miscellaneous Pipelines
PF	-	Break Pressure Tanks
PG	-	Standpipes
PH	-	HDPE Pipes and Fittings
PJ	-	Mild steel pipes and fittings

The term "Project Specifications" appearing in any of the SANS standardised specifications must be replaced with the term "Scope of Work".

b) Applicable National Standards

i) Building Work

The "Specification of Materials and Methods to be Used (Fourth Revision)" as published by the Department of Public Works shall apply to the portion of the Works specifically associated to building work. This document may be downloaded from the website of the Department of Public Works at www.publicworks.gov.za.

C3.3.1 PORTION 2: VARIATIONS AND ADDITIONS TO THE STANDARD SPECIFICATIONS

This section covers the variations and additions to the SANS 1200 Standard Specifications applicable to this Contract, as per SANS 0120. Note: the number in brackets denotes the Standard Clause number.

PSA GENERAL**PSA 1 Scope (1)**

Replace sub-clause 1.1 with the following:

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

PSA 2 Interpretations (2)**PSA 2.1 Definitions (2.3)**

(a) General (a)

Add the following definitions:

"Task: A quantified activity or operation.

Task work: Work paid for by the completed task or job.

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

Daily wage: See daily rate.

Task rate: The remuneration for a completed task.

Labour intensive construction:

The employment of as great a portion of labour as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available, thus the effective substitution of labour for mechanised or motorised construction equipment.

Labour based construction:

See Labour intensive construction."

(b) Measurement and payment (c)

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

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

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

PSA 2.2 Abbreviations (2.4)

(a) Abbreviations relating to standard documents (a)

Add the following abbreviation:

"CKS: SABS Co-ordinating Specification."

PSA 3 Materials (3)**PSA 3.1 Quality (3.1)**

Add the following:

"Where applicable, materials are to bear the official standardisation mark.

Where proprietary materials are specified it is to indicate the quality or type of materials or articles required and where the terms "or other approved" or "or similar approved" are used in connection with proprietary materials or articles, it is to be understood that the approval shall be at the sole discretion of the Employers Agent".

PSA 3.2 Ordering of Materials (New Sub-Clause)

The quantities set out in the Schedule of Quantities have been determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The liability shall rest entirely and solely with the Contractor to determine before ordering, the required types and quantities of the various materials required for the completion of the Works in accordance with the Specifications and the Drawings issued to the Contractor for construction purposes.

Any reliance placed by the Contractor on the estimated quantities stated in the Schedule of Quantities issued for tendering purposes, or measurements made by the Contractor from the drawings issued for tendering purposes, shall be entirely at the Contractor's risk, and the Employer accepts no liability whatsoever in respect of materials ordered by the Contractor on the basis of Tender Documents.

PSA 4 Safe Guarding Machinery**PSA 4.1 Management of construction machinery**

Alter the reference to the "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" to "Occupational Health and Safety Act, 1993 (Act 85 of 1993)" and General Machinery Regulations (GNR 1521 of 05 August 1988).

PSA 4.2 Contractor's Office, Stores and Services (4.2)

Alter the clause heading to "CONTRACTOR'S OFFICE, STORES, SERVICES AND HOUSING"

Add the following to the first paragraph of Sub-clause 4.2:

"Stores erected by the Contractor shall be suitable for storing materials for the various Subcontractors engaged on this Contract. Such stores may be combined as one store or separate as the Contractor deems necessary."

Add to the Sub-Clause:

"Neither housing nor shelters are available for the Contractor's employees, and the Contractor shall make his own arrangements to house his employees and transport them to and around the Site. The Contractor shall make arrangements with the local Tribal Authority for the lease or exclusive use of land for accommodating his employees. The Contractor shall be responsible for the security and general control of his compound at his own cost.

The Employer will identify an area of ground for the Contractor to enable him to erect his site offices, workshops and stores. Any land required for temporary facilities which the Contractor may wish to erect for his personnel and those employed by the Subcontractors will require approval from the Employer. The Contractor shall not be required to pay any rental fee for the site camp ground designated by the Employer. The fence erected by the Contractor around his site camp, and the contractors offices of at least 30m², shall be left for the community after the project has been completed. These are to be refurbished to the Employers Agent's approval.

Personnel will not be allowed to reside inside the Contractor's Site Office area. The Contractor shall be responsible for the security of his construction camp, the construction Site, the Employers Agent's Office and accommodation for his personnel at his own cost. Only night watchmen may be on the Site after hours.

The Contractor may make arrangements for the establishment of his housing at an alternative location at his own cost after approval by the Employers Agent.

All roadways and pathways inside the enclosed area shall be treated to make them dust free and negotiable under all weather conditions, either with crushed stone, gravel or other approved means, deemed to be included in the Contractors own cost.

The Employer shall make the necessary arrangements regarding the temporary occupation of land required for the Contractor's Establishment. The administration of the land in the Project Area falls under the Tribal Authority. "

PSA 4.3 Restriction on the Use of Construction Equipment (New Sub-clause)

The Contractor shall use only hand tools and equipment in the construction of the portions of the Works identified as being a Labour Intensive activity, except for the following items of mechanical Construction Equipment as approved by the Employers Agent:

- vehicles to be used for transporting purchased items from the Contractor's campsite or the storage site, to the places on site where they will be incorporated into the Works
- water bowser for transporting water
- pedestrian operated compactors
- wackers
- Excavation equipment (only where digging by hand is impractical due to the nature of the ground as determined by the Employers Agent).

PSA 5 Construction (5)**PSA 5.1 Survey (5.1)****PSA 5.1.1 Setting Out of the Works (5.1.1)**

Add:

"Where Labour Intensive work is specified, the Contractor shall be responsible for the setting out of the daily tasks for the labourers in his employ and for checking the daily tasks set out by the Subcontractors."

PSA 5.1.2 Preservation and Replacement of Pegs Subject to Land Survey Act (5.1.2)

Add to the Sub-Clause:

"All existing survey reference pegs shall be clearly marked and protected by the erection of three fencing standards adjacent to the pegs.

PSA 5.2 Protection of Structures (5.3)

Alter the reference to the "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" to "Occupational Health and Safety Act, 1993 (Act 85 of 1993)" and General Machinery Regulations (GNR 1521 of 05 August 1988).

PSA 5.3 Protection of Underground Services (5.4)

Delete title and substitute the following:

Protection of Exposed and Underground Services.

Add to the Sub-Clause

"Proving of services shall be paid for under the item/s included in the Schedule as approved by the Employers Agent ".

PSA 5.4 Safety (5.7)

Re-title this Sub-Clause "HEALTH AND SAFETY" and replace the contents of this Sub-clause with:

"All work under this Contract shall be carried out in terms of the Occupational, Health and Safety Act, (Act 85 of 1993) and shall be subject to its Construction Regulations, 2014. The Employer's Project Health and Safety Specifications pertaining to this project are included under Particular Specifications."

PSA 5.5 Environmental management (new sub-clause)

Add the new sub-clause:

"The Contractor shall take note of the mitigation requirements in the Environmental Management Plan (EMP), which has been included in Annexure D of the Contract Document, and take the necessary steps for compliance with the EMP to ensure minimal environmental impact throughout the project duration."

PSA 6 MEASUREMENT AND PAYMENT (8)**PSA 6.1 Payment (8.2)****PSA 6.2 Scheduled Fixed Charge and Value Related Items (8.3)****PSA 6.2.1 Other Fixed Charge obligations (8.3.3)**

Add to the description:

"The Contractor's initial costs for management of labour intensive construction, as well as complying with the Environmental Management Plan and the New Construction Regulations, 2003 of the Occupational, Health and Safety Act, 2014 (Act 85 of 1993), shall also be included in the Sum tendered."

PSA 6.2.2 Establishment of Facilities on Site (8.3.2)**PSA 6.2.2.1 Facilities for the Employers Agent (8.3.2.1)**

Re-title the sub-clause "Office, furniture, kitchen, ablutions and vehicle shelter for the Employers Agent".

PSA 6.3 Scheduled Time Related Items (8.4)**PSA 6.3.1 Contractual Requirements (8.4.1)****PSA 6.3.1.1 Health and Safety Obligations (new sub-clause)**

- (a) "The Contractor's general time related costs for complying with the New Construction Regulations, 2014 of the Occupational, Health and Safety Act, 1993 (Act 85 of 1993) shall be included in the Sum tendered."

General Health and Safety ObligationsUnit: Sum

The sum tendered shall be paid in instalments pro-rata to the estimated percentage completion of the Works.

- (b) "The Contractor's time related costs for complying with the New Construction Regulations, 2014 of the Occupational, Health and Safety Act, 1993 (Act 85 of 1993) shall be included in the Sum tendered for specific portions of the Works .

Specific Health and Safety ObligationsUnit Sum

The sum tendered shall be paid in instalments pro-rata to the estimated percentage completion of the specified portion of Works."

PSA 6.3.1.2 Environmental Management (new sub-clause)

"The Contractor's time related costs for complying with the Environmental Management Plan (EMPr) in the Contract document shall be included in the Sum tendered."

Time Related Environmental Management (New sub-clause)Unit: Sum

The sum tendered shall be paid in instalments pro-rata to the estimated percentage completion of the Works and shall cover the cost of complying with the recommendations of the Environmental Management Plan for the project. In the event the Contractor is not compliant the contractor will not be compensated.

PSA 6.3.1.3 Management of Labour Intensive Construction (new sub-clause)

"The Contractor's time related costs for the management of labour intensive construction shall be included in the Sum tendered."

Time Related Management of Labour Intensive Construction (New sub-clause)Unit: Sum

The sum tendered shall be paid in instalments pro-rata to the estimated percentage completion of the Works. This is inclusive of providing EPWP branded orange overalls to all local labourers in accordance with the latest EPWP guidelines.

PSA 6.4 Sums stated provisionally by the Employers Agent (8.5)**PSA 6.4.1 Provisional Sum for Accredited Training (new sub-clause)**

The Contractor shall provide accredited training as specified in C3.3.1 Portion1: The Works PS 8

Provisional Sum for Accredited training, transport and accommodation of trainees sent for accredited training.....Unit: Prov Sum

Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.2 Provisional Sum for Community Development Consultant and Community Liaison Officer (new sub-clause)

Provisional items have been scheduled to cover the cost of a Community Development Consultant for the project, as appointed by the Employer, as well as the cost of a Community Liaison Officer.

All payments made to the Consultant and Liaison Officer shall be approved by the Employers Agent.

Provisional Sum for Community Development ConsultantUnit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %
 PSA 6.4.3 Provisional Sum for **Community Liaison Officer**.....Unit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.4 Provisional Sum for **Employers Agent's Accommodation** (new sub-clause)

A Provisional Sum for Accommodation has been allocated for the Employers Agent and/or his staff. The accommodation shall be arranged by the Employers Agent. The Contractor shall make timeous payments to the establishment as arranged with the accommodation's management.

Provisional sum for Employers Agent's accommodation.Unit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.5 Provisional Sum for **Travel** (new sub-clause)

The provisional sum is to cover the cost of any necessary vehicle/vehicles for the Employers Agent and his assistants for on site use.

Provisional Sum for Employers Agent's Transport Costs.....Unit:
 Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.6 Provisional Sum for **Cell Phone and internet Costs** (new sub-clause)

The Contractor shall cover the costs of the Employers Agent's cell phones and internet usage as specified in clause PSAB 3.1.

Provisional Sum for Cell Phone and internet Costs.....Unit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.7 Provisional Sum for **Survey** (new sub-clause)

A provisional item has been scheduled to cover any survey of the Works by a nominated surveyor appointed by the Employers Agent, for survey work required for the Employers Agent's design purposes.

Provisional Sum for Survey by a Nominated Surveyor.....Unit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 6.4.8 Sum for management of Work done by **Local Emergent Subcontractors** (new sub-clause)

The Contractor shall appoint suitable Local Emergent Subcontractors from the uMkhanyakude District, and shall be paid a management fee as a percentage of the value of the work done by the subcontractors.

Contractors Management, overheads, charges and profit on work done by local emergent subcontractors.....Unit: Sum

PSA 6.4.9 Provisional Sum for **refurbishment** of Existing Services (new sub-clause)

The Contractor shall refurbish existing services as instructed by the Employers Agent

Refurbishment of Existing Services.....Unit: Prov Sum
 Management, overheads, charges and profit on above itemUnit: %

PSA 6.4.10 Provisional Sum for **refurbishment of existing access road** (new sub-clause)

A provisional item has been scheduled to cover refurbishment of existing access road

Provisional Sum for Refurbishment of existing access road.....Unit: Prov Sum
 Management, overheads, charges and profit on the above item.....Unit: %

PSA 7 TESTING

PSA 7.1 PRINCIPLES

PSA 7.1.1 Checking

Replace the subclause with the following:

The Contractor shall carry out sufficient checks to satisfy himself and the Employers Agent that the materials used and the workmanship (i.e the quality of construction, adherence to tolerances and, when applicable, the strength attained) comply consistently with the specified requirements, and the results of those checks shall be submitted to the Employers Agent.

The contractor may either carry out all tests and checks using his own resources or else elect to employ an approved laboratory to carry out the work. If the contractor chooses to carry out testing himself, he must maintain on site all necessary equipment, including, but not limited to the following:

- sufficient concrete cube moulds
- slump cone and accessories

- constant temperature cube bath (unless cubes are stored at external laboratory)
- Cube crushing machine (unless cubes are crushed at external laboratory)
- Dynamic cone penetrometer
- Nuclear density apparatus

The Employers Agent may carry out such checks as deemed necessary at any point or at any depth or at any layer, as applicable.

PSA 8.3.2.3

Add the following:

The Sum for item c) shall include for all testing of the works whether carried out using the Contractors own testing personnel and equipment or using the services of an external testing laboratory.

Testing as instructed by the Employers AgentUnit:
Sum

Management, overheads, charges and profit on above itemUnit: %

PSAB EMPLOYERS AGENT'S OFFICE

PSAB 1 Scope (1)

PSAB 1.1 Sub-Clause 1.1

Replace the clause with:

"This specification covers the requirements for offices, be it prefabricated, semi prefabricated, mobile or semi-mobile and associated facilities for the Employers Agent's supervisory staff on Site, including the provision of the necessary structures, services and all arrangements in connection with the land on which the facilities are to be provided."

PSAB 2 Materials (3)

PSAB 2.1 Name boards (3.1)

Add the following:

"Two name boards shall be provided, as detailed on the Tender Drawing. The details shall be confirmed prior to Construction."

PSAB 2.2 Office Buildings (3.2)

Replace the contents of Sub-clause 3.2 with:

The contractor shall provide all facilities described in i) to v) below. These facilities are to be for the exclusive use of the Employers Agent and his staff only.

The ownership of all offices, furniture and equipment provided by the Contractor for the Employers Agent under this specification shall, when no longer required by the Employers Agent, revert to the Employer and shall be refurbished. The camp site shall then be rehabilitated to the satisfaction of the Employers Agent.

i) Offices

New Employers Agent's offices are required to be supplied under this contract.

ii) Employers Agent's furniture:

The Contractor shall provide the following furniture for the Employers Agent:

1. One desk with a top area at least 1.5m² with 3 drawers of which at least one shall be lockable
2. A table 1.2m x 0.8m minimum dimensions suitable for A0 drawings
3. One height-adjustable chair on rollers for the desk, with padded seat, backrest and armrests
4. One 2.2kW electrically operated, closed circuit, compressor type air conditioning unit
5. A toner type photocopier with the capability of copying both A3 and A4 sized copies and the capability to sort and scan, together with all toner and paper required for the Employers Agents use for the duration of the contract.
6. One suitable waste paper bin.

The provided furniture and equipment shall conform to the minimum requirements above and shall be supplied in a good working condition. ***The Contractor shall replace any fitting, piece of furniture or equipment that is not to the satisfaction of the Employers Agent.***

iii) Kitchen facilities:

The existing kitchen comprises of a floor area of approximately 12m² including electricity supply and shall be fitted with:

1. Coffee machine.
2. Automatic Kettle.
3. Tea, sugar, milk and coffee, as required by the Employers Agent.

vi) Ablutions:

An ablution unit is available on site for the exclusive use by the Employers Agent. The Contractor shall provide the Employers Agent with adequate supply of toilet paper, clean hand-towels and hand wash liquid for the duration of the contract.

PSAB 3 Plant (4)**PSAB 3.1 Telephone (4.1)**

Replace with the following:

"The Provisional Sum scheduled shall cover the cost of the Employers Agent's and Employers Agent's assistant's cell phone and internet costs for the duration of the contract."

Provisional Sum for Employers Agent's Internet and Cell Phone Costs.....Unit: Prov Sum

PSAB 3.1.1 Management, overheads, charges and profit on the above item.....Unit: %

PSAB 4 Construction (5)**PSAB 4.1 Survey Assistants (5.5)**

Replace with the following:

"The Contractor shall make available to the Employers Agent two suitably educated labourers for use on and about the site on survey and other work directed by the Employers Agent at all reasonable times. The contractor shall supply all necessary materials that the Employers Agent may require with any survey work he carries out.

PSAB 4.2 Survey Equipment (New Sub-Clause 5.6)

Add new Sub-Clause :

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

- *One automatic levelling Employers Agent's level plus tripod and ancillaries
- *One levelling staff (4m long, 1cm gradations)
- *Two staff angle bubbles
- *One metal change-point for levelling
- *One spirit laser level (one metre long)
- *Six steel-tipped ranging rods each 2,5m long
- *One hammer (2kg)
- Two canvas carry-bags
- *One 100m steel tape - Webco, Stanley or similar approved.
- *One 30m steel tape - Webco, Stanley, or similar approved.
- *Three 5m steel tape - Webco, Stanley, or similar approved.
- *One measuring wheel
- Two *62 CSX Garmin or similar approved.

* This survey equipment is for the sole use of the Employers Agent or his representative on Site. The Contractor shall keep the equipment continuously insured against any loss, damage, or breakage and he shall indemnify the Employers Agent and the Employer against any claims in this regard.

The Contractor shall arrange for the repair & replacement of any damaged equipment. All equipment provided shall be supplied with the appropriate and valid calibration certification to the Employers Agent.

The cost of providing and maintaining the equipment is to be included in the contractor's other fixed charge obligations and general time related items. The equipment shall revert to the contractor when no longer required by the Employers Agent.

PSC SITE CLEARANCE**PSC 1 Scheduled items (8)****PSC 1.1 Clear and grub (8.2.1)**

Add to the description:

"The free haul for the disposal of materials to a site designated by the Employers Agent shall be 1.0km from the source."

PSC 1.2 Take down existing fences (8.2.5)

Add the following to the description:

"Where the Contractor is required to take down existing fences, the Contractor's price shall include for re-erection of existing fencing and repair any damaged fencing incurred during the taking down or re-erecting of the fences, this would also include for the replacing of fencing should it be damaged when removing."

PSC 8.2.10 Temporary Fencing (new sub-clause)

The contractor shall supply, install and maintain temporary fencing on both sides of the working area and around the perimeter of all agreed additional working areas during construction for prevention of unauthorised access and shall remove it on completion of the works. The fencing shall comprise of Bonnox 4 x 4 mesh fencing, Bonnox pattern 1972/4. With straining posts and straining wires as required and according to the suppliers directions and with mesh spacing not exceeding 1000mm in both the vertical and horizontal directions. Chevron tape shall be interwoven in zigzag pattern from the top to the bottom of the fence thereby clearly marking off the working area.

Payment will be made per linear meter of temporary fencing installed and the rate shall include for maintaining such fencing in good condition, including daily surveillance and repair, throughout the duration of construction and removal of completion of the works.

PSD EARTHWORKS**PSD 1 Scope (1)**

Add to Sub-Clause 1.1:

"Clauses have been altered, expanded or included making allowance for Labour Intensive construction methods. Although primarily Labour Intensive construction methods shall be used during this contract, situations may occur where construction equipment based construction will be required. These situations shall be entirely at the Employers Agent's discretion."

PSD 2 Interpretations (2)**PSD 2.1 Definitions (2.3)**

The term "Restricted Excavation" shall not apply when using Labour Intensive construction methods.

Replace the definition "Borrow" with the following:

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

Replace the definition "Specified density" with the following:

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

Replace the definition "Stockpile" with the following:

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

Add the following definitions:

"Fill: An embankment or terrace constructed from material obtained from excavations or borrow.

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

PSD 3 Materials (3)**PSD 3.1 Classification for Excavation Purposes (3.1)****PSD 3.1.1 Method of classifying (3.1.1)**

Replace the first sentence of the sub-clause with:

"The Contractor shall utilise Labour based excavation methods as far as is reasonably possible. The Contractor shall only employ other excavation methods with the approval of the Employers Agent."

Add the following to the description:

"Classification of material shall be agreed upon and recorded at the commencement of excavation.

The Contractor shall immediately inform the Employers Agent when the nature of the material being excavated changes to such an extent that a new classification for further excavation is warranted. Failure on the part of the Contractor to advise the Employers Agent thereof in good time shall entitle the Employers Agent to classify the material.

PSD 3.1.2 Classes of excavation (3.1.2) – hand excavation

Replace sub-clause (a) to (e) with the following:

"The excavation of material will be classified as follows for the purposes of measurement and payment:

a) Excavation class 1

Excavation in very loose granular materials or very soft cohesive materials, easily done with a shovel only.

The typical production rate per day per person is 3m³ for hand excavation.

b) **Excavation class 2**

Excavation in loose to medium dense granular materials or soft to soft-firm cohesive materials requiring a pick and shovel. The typical production rate per day per person is 2.5m³ for hand excavation.

c) **Excavation class 3**

Excavation in medium dense to dense granular materials, or firm and stiff cohesive materials, which may contain cobbles and boulders smaller than 300mm in diameter, requiring a pick and shovel. The typical production rate per day per person is 2.0m³ for hand excavation.

d) **Excavation class 4**

Excavation in very dense granular materials, very stiff cohesive materials or very soft to soft rock, requiring work with pneumatic tools followed by a pick and shovel. The typical production rate per day per person is 1.5m³ or less for hand excavation.

e) **Boulder excavation**

Excavation in material containing more than 40% by volume of boulders of size in the range 0.0005m³ (approximately 1.6kg and a sphere with a diameter of 100mm) up to 0.026m³ (approximately 80kg and a sphere with a diameter of 370mm) in a matrix of softer material and smaller boulders. Boulders larger than 0.026m³ shall be classified as Hard Rock excavation.

f) **Hard rock excavation**

Excavation in medium hard to hard rock or boulders larger than 0.026m³ as described in (e) above, and where hand excavation is not possible.

The excavation of materials that do not meet the classification as defined under (a) to (e) of this clause shall be affected by conventional methods.

PSD 4 Construction Equipment (4)

PSD 4.1 Excavation Construction Equipment (4.1)

Insert the following sentence at the beginning of this clause:

"Although Labour Intensive construction methods are specified for this Contract, instances may occur where conventional Construction Equipment may have to be used to perform specific tasks. The Employers Agent shall decide when the Contractor may use conventional Construction Equipment and the following shall then apply."

PSD 5 Construction (5)

PSD 5.1.1.1 Safeguarding of Excavations (5.1.1.2)

a) Substitute this clause with the following:

"The Contractor or his agent or representative appointed in writing by the Contractor shall be deemed to be the 'competent person' as defined Clause 11(1) of the new Construction Regulations, 2003 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) as published in the Government Gazette - 15 117 Volume 4"

PSD 5.2 Methods and Procedures (5.2)

PSD 5.2.1 Site Preparation (5.2.1)

Replace the Sub-Clause with:

"Shrubs, bush, stumps of small trees and debris shall be removed and loaded by Labour Intensive methods. When ordered, large trees shall be uprooted by mechanical means. Carting and disposal of the material generated by the preparation of the site to designated sites by the Contractor shall be by trucks."

PSD 5.2.2 Excavation (5.2.2)

Add to b):

"Where outside shuttering is ordered by the Employers Agent, excavation of not more than 600mm over the outside dimensions of the structure shall be deemed necessary for the fixing of outside formwork. This extra excavation and refilling, up to 600mm wide, where necessary, is to be measured and paid for under quantities allowed for this purpose in the Schedule of Quantities. Outside shuttering shall be used for the construction of all major structures unless ordered otherwise by the Employers Agent."

Delete the first sentence of c) and replace with:

"Each excavated surface on which or against which a permanent concrete structure will be placed shall be trimmed to ensure that there is no projection greater than 20mm into the excavated profile."

Add to g):

"The Contractor shall not spoil, waste or stockpile excavated material without approval."

PSD 5.2.3 Backfill of Unavoidable Over-Excavation in Boulder Formation (New Sub-Clause).

Add new Sub-Clause:

"Upon completion of an excavation in boulder formation, the excavation is to be backfilled, in part or 'in total' as instructed by the Employers Agent, with approved material obtained from other excavations or with selected sandy material stabilised with 12 percent (by volume) of cement and compacted with mechanical tampers in accordance with the requirements of Sub-Clause 5.2.3.2 so as to achieve a 95 percent AASHTO density at OMC before being re-excavated to lines and levels shown on the drawings."

PSD 5.2.4 Transport for Earthworks (5.2.5)

PSD 5.2.4.1 Freehaul

Delete b) in its entirety.

PSD 6 Measurement and Payment (8)

PSD 6.1 Basic Principles (8.1)

Replace the first sentence of Sub-Clause 8.1 with the following:

“Although the Contractor's basic unit of measuring performance during a contract using Labour Intensive construction methods is task work, the basic principles of measurement and payment to the Contractor for all earthworks are that the rates tendered for excavation shall cover the cost of excavating and re-use of all material in backfilling, forming embankments, etc., and the cost of disposal of any surplus or unsuitable material within the free haul distance.”

PSD 6.2 Scheduled Items (8.3)**PSD 6.2.1 Site Preparation (8.3.1)****PSD 6.2.1.1 Clear and strip site (8.3.1.1)**

Add to the end of the description: "allowing for labour intensive construction."

PSD 6.2.1.2 Remove topsoil etc.

Add to the description of this item:

"For Labour Intensive construction methods, the rate shall cover the cost of clearing veld grass, removing the topsoil to a nominal depth of 150mm, carting the topsoil within the free haul for wheel barrow carting, stockpiling and preventing a dust nuisance, and spreading as ordered by the Employers Agent."

PSD 6.2.2 Bulk Excavation (8.3.2)

Replace the sub-clause with the following:

"PSD 6.2.2.1 Hand excavation

Excavate by hand and use for embankment or backfill or dispose, as ordered, in materials in the following excavation classes as described in PSD 3.1.2:

- | | | |
|-----|--------------------------|----------------------|
| (a) | Excavation class 1..... | Unit: m ³ |
| (b) | Excavation class 2..... | Unit: m ³ |
| (c) | Excavation class 3..... | Unit: m ³ |
| (d) | Excavation class 4..... | Unit: m ³ |
| (e) | Boulder excavation | Unit: m ³ |

PSD 6.2.2.2 Construction Equipment excavation

Excavate using Construction Equipment, only with the approval of the Employers Agent, and use for embankment or backfill or dispose, as ordered, in materials in the following excavation classes as described in PSD 3.1.2:

- | | | |
|-----|-------------------------------|----------------------|
| (a) | Excavation class 1 and 2..... | Unit: m ³ |
| (b) | Excavation class 3 and 4..... | Unit: m ³ |
| (c) | Boulder excavation | Unit: m ³ |
| (d) | Hard rock excavation | Unit: m ³ |

The rates shall cover the cost of complying with all precautions in 5.1 in addition to the cost of excavation, basic selection, loading, transportation within free haul distance, offloading, spreading or backfilling, watering, compacting, final grading, complying with the requirements for tolerances, providing for testing, and disposal of soil, all in accordance with the requirements of the specification."

PSD 6.2.3 Restricted Excavation (8.3.3)

Replace the sub-clause with the following:

"PSD 6.2.3.1 Restricted Construction Equipment excavation

Excavate using Construction Equipment, only with the approval of the Employers Agent, and use for embankment or backfill or dispose, as ordered, in materials in the following excavation classes as described in PSD 3.1.2:

- | | | |
|-----|-------------------------------|----------------------|
| (a) | Excavation class 1 and 2..... | Unit: m ³ |
| (b) | Excavation class 3 and 4..... | Unit: m ³ |
| (c) | Boulder excavation | Unit: m ³ |
| (d) | Hard rock excavation | Unit: m ³ |

The rates shall cover the cost of complying with all precautions in 5.1 in addition to the cost of excavation, basic selection, temporary stockpiling, loading, transportation within free haul distance, offloading, spreading or backfilling, watering, compacting, final grading, complying with the requirements for tolerances, providing for testing, and disposal of soil, all in accordance with the requirements of the specification."

PSD 6.2.4 Overhaul (8.3.6)

Add the following:

"No overhaul shall apply to material from commercial sources or to material disposed of to sites provided by the Contractor or by other means employed by the Contractor.

ii) Overhaul using Labour Intensive methods of construction

- | | | |
|----|------------------------|----------------------|
| c) | Wheel Barrow Haul..... | Unit: m ³ |
|----|------------------------|----------------------|

The unit of measure will be m³ hauled over the standard distance of 100m or other standard distance determined by the Employers Agent to be suitable for the circumstances prevailing on the Site of the Works. The tendered rate shall cover the cost of loading the wheelbarrow, pushing the required haul distance, tipping out the contents and returning to the same point of loading. The haulage distance will be measured to the nearest 10m from the end of the free haul range to the point of tipping, in one direction only. Volumes measured under (c) above will also be measured under the excavation items.

Volumes will be computed from the designated dimensions. No allowance will be made for bulking. Volumes for wheelbarrow haul will be reduced pro rata to the difference between the actual length hauled and the standard haul length directed by the Employers Agent.

PSD 6.2.5 Rip and compact (new sub-clause)

Add the new sub-clause:

“Rip and compact insitu material to 95% Modified AASHTO density.....Unit: m³

The unit shall be m² and the area shall be equal to the area of the required blinding layer. Rates shall cover the cost of labour and equipment required to rip and compact the insitu material in preparation for casting blinding, as ordered by the Employers Agent.”

PSDB EARTHWORKS (PIPE TRENCHES)**PSDB 1 Materials (3)****PSDB 1.1 Backfill Material (3.5)**

In the third line of a) substitute "100 mm "for "150 mm".

PSDB 1.2 Materials for Reinstatement of Roads and Paved Areas (3.6)

Delete the sub-clauses 3.6.1 and 3.6.2 and substitute:

"Material used in the reinstatement of roadways shall fall into either of the following categories:

- (a) Foundation material recovered from the excavation of trenches across existing roadways, which, if so instructed by the Employers Agent, shall be set aside and re-used as sub-base material.
- (b) New material that shall conform to the requirements of:
 - i) Clause 3.2.1 of SANS 1200 ME for the sub base
 - ii) Clauses 3.2 and 3.3 of SANS 1200 MF for the base course
 - iii) Clause 3.2.2 of SANS 1200 ME for the gravel wearing course."

PSDB 1.3 Selection (3.7)

Delete the second sentence and substitute the following:

"The Contractor is not required to use selective methods of excavating but may do so at his own cost. The Contractor shall, however, if so instructed by the Employers Agent, screen or otherwise treat excavated material in order to produce material suitable for bedding or covering or both bedding and covering for the pipeline."

PSDB 2 Construction Equipment (4)**PSDB 2.1 Excavation Construction Equipment (4.1)**

Insert at the beginning of this Clause:

"Although Labour Intensive construction methods shall be used for trench excavation, situations could arise where excavation Construction Equipment is required and then the Contractor"

Add to the Sub-clause:

"Excavations on gradients too steep for normal excavating equipment to operate on (greater than 1:3) or in locations prohibiting the use of normal excavating equipment, such as amongst buildings, may have to be done by hand. Items have been included in the Schedule of Quantities for necessary hand excavation."

PSDB 3 Construction (5)**PSDB 3.1 Minimum Base Widths (5.2)**

Replace the sub-clause with the following:

"Unless otherwise ordered by the Employers Agent, the trench widths shall be as follows:

<u>Pipe size</u>	<u>Trench width</u>
50 & 63mm Ø	450mm (hand excavation)
50 & 63mm Ø	600mm (machine excavation)
75 to 200mm Ø	550mm (hand excavation)
75 to 200mm Ø	600mm (machine excavation)
315 to 500mm Ø	1000mm (hand excavation)
315 to 500mm Ø	1200mm (machine excavation)

The Contractor shall only be paid for excavating the above trench widths unless it is deemed by the Employers Agent that a larger excavation bucket is appropriate where machine excavation is employed.

The Contractor shall use compaction tools that suit the smaller side allowance of trenches excavated by hand. Because of the reduced side allowance, the Contractor shall take special care to excavate the trenches true to line. Where existing pipes are to be exposed for removal and replacement, the minimum base widths shall be the pipe outside diameter plus 250mm on either side of the pipe for pipes up to 450mm nominal diameter.

Where two pipes are to be laid in a single trench, the width shall be equal to the sum of the outside pipe diameters plus 150mm between the pipes, plus 125mm on either side of the pipes.

Trench sides shall be as near vertical as possible in order to minimise the quantity of backfill material and to avoid possible difficulties where pipelines have to be installed parallel to existing services, fences, hedges, etc."

PSDB 3.2 Site Clearance (5.3)

Replace the first sentence with:

"The Contractor shall clear a 2m wide strip along the pipe trench, using labour intensive methods, only when ordered to do so by the Employers Agent."

PSDB 3.3 Trench Bottom (5.5)

Add to the second paragraph:

"Where the bottom of the trench is in water logged conditions, the Employers Agent may instruct the Contractor to lay a 200mm thick layer of 20mm graded stone, under the pipes."

PSDB 3.4 Backfilling (5.6)

PSDB 3.4.1 General (5.6.1)

Add:

"Notwithstanding the requirements of Sub-Clauses 5.6.1 and 5.6.6 of SABS 1200 DB, no pipe joint or pipe fitting shall be covered by either the blanket fill or the main fill prior to the successful completion of the visual inspection and the pressure testing of the relevant section of the pipeline."

PSDB 3.4.2 Disposal of Soft Excavation Material (5.6.3)

Replace the Sub-Clause with:

"Soft excavation material from the trench, which is unsuitable or has become surplus because of bulking, displacement by the pipe and importation, shall be spread along the trench servitude."

PSDB 3.5 Compaction (5.7)

PSDB 3.5.1 Areas Subject to Traffic Loads (5.7.2)

Add to the Sub-Clause :

"for an extent of 1 m on either side of the carriageway at each crossing."

PSDB 4 Measurement and Payment (8)

PSDB 4.1 Basic Principles (8.1)

PSDB 4.1.1 Basic Principles of Measurement (8.1.1.1)

Replace the first sentence with:

"Although the Contractor's basic unit of measuring performance during a contract using Labour Intensive construction methods is task work, the basic principles of measurement and payment to the Contractor for earthworks for a pipe trench is that the rates tendered for excavation shall cover the cost of excavation and the re-use of the excavated material for backfilling and the disposal of any surplus material along the route of the pipeline within free haul distance of the source."

Add:

"Where mechanical excavation is required for trenches under Labour Intensive construction conditions or instruction by the Employers Agent, the tendered rate shall cover the cost of the excavation by machine with labour intensive backfilling, compacting and disposal of surplus material.

8.1.2 (a) and (b)

Replace the sub-clauses with:

All new trench excavations shall be measured by length for the computation of volumetric excavation as described in clause PSDB 4.2. Where existing pipes are exposed, the excavations shall be measured volumetrically.

PSDB 4.2 Computation of Quantities (8.2)

PSDB 4.2.1 8.2.3

Replace the sub-clause with:

"For all new trenches, the Contractor shall be paid for required volumes excavated: Length of trench (m) x Width of trench (m) x Depth of trench (m). The depth of trench will be that depth required to provide the prescribed cover to the pipe: Bedding cradle + pipe diameter + prescribed cover (neat).

The prescribed depth of cover to pipes, unless otherwise ordered by the Employers Agent, is as follows:

Untrafficked areas: 900mm cover

Trafficked areas: 100mm cover

Within district road reserves: 1200mm cover

Where existing pipes are exposed, the Contractor shall be paid for actual volumes excavated.

Widths for the computations for excavations for new trenches shall be as specified in clause PSDB 3.1."

PSDB 4.3 Scheduled Items (8.3)

PSDB 4.3.1 Site Clearance (8.3.1)

PSDB 4.3.1.1 Clear vegetation and trees of girth up to 1m

Add to the description in the sub-clause with:

"The rate for clearing along the pipe line route shall be for a 2m wide strip; 1.0m on either side of the centre line. The rate shall be for the clearance of thick vegetation other than veld grass, or boulders which can be removed by hand, only as ordered by the Employers Agent."

PSDB 4.3.1.2 Remove topsoil

Replace the first sentence in the description in the sub-clause with:

"The rate shall include for clearing veld grass as well as removing the topsoil to a depth of 150mm along the pipe route. The width shall be the specified trench width."

PSDB 4.3.2 Excavation (8.3.2)

Replace the contents of the sub-clause with:

- i. "Excavate in the following materials and use for embankment or backfill or dispose of surplus material, as ordered, using hand excavation as ordered by the Employers Agent:

Excavation Class 1.....	Unit:	m ³
Excavation Class 2.....	Unit:	m ³
Excavation Class 3.....	Unit:	m ³
Excavation Class 4.....	Unit:	m ³
Boulder Excavation.....	Unit:	m ³

- ii. "Excavate in the following materials and use for embankment or backfill or dispose of surplus material, as ordered, using Construction Equipment excavation as ordered by the Employers Agent:

Excavation Class 1 and 2	Unit:	m ³
Excavation Class 3 and 4	Unit:	m ³
Boulder Excavation.....	Unit:	m ³
Hard Rock Excavation	Unit:	m ³

Separate items will not be provided for depth increments. Volumes will be computed from the trench width determined in accordance with PSDB 4.2. The rates shall cover the additional cost of the excavation and handling of the more difficult material and, in the case of rock, of the disposal within free haul distance and the replacement of unsuitable material.

PSDB 4.3.3 Existing Services that Intersect or Adjoin a Pipe Trench (8.3.5)

Delete the last sentence of the sub-clause and substitute the following:

"The tendered rate for an item scheduled in terms of 8.3.5.1 and 8.3.5.2 shall include for:

- (a) Care in excavation necessitated by presence of such service in or across the trench.
- (b) All work involved in locating the service by hand excavation.
- (c) Notifying and attending upon the proprietor of the service.
- (d) Supporting and protecting the service while excavating in its vicinity.
- (e) Maintaining the service in operation.
- (f) Supporting and protecting the service while the pipeline is installed, inspected, tested and backfilled.
- (g) Any repairs necessitated by damage caused by the Contractor."

PSDB 4.4 Finishing

PSDB 4.4.1 Reinstate road surface complete with all courses (8.3.6.1)

Add the following:

"The rate shall include the cost of cutting the existing asphalt and paved surfaces, measured as length of trench.....Unit: m

Concrete (Structural)**PSG 1 Materials (3)****PSG 1.1 Cement (3.2)**

PSG 1.1.1 Applicable Specifications (3.2.1)

Unless agreed to otherwise by the Employers Agent, the cement used on the Works shall be CEM 1, grade 42.5 complying with the requirements of SANS ENV 197-1.

PSG 1.1.2 Storage of Cement (3.2.3)

Add to the sub-clause:

"Cement shall not be kept in storage for longer than three weeks without the Employers Agent's permission. The cement store shall be run on a first in, first out basis."

PSG 1.2 Aggregates (3.4)

PSG 1.2.1 Applicable Specification (3.4.1)

Add to the Sub-Clause:

"Sand from a source selected by the contractor and approved by the Employers Agent after testing will be used under this Contract.

The Contractor shall demonstrate by means of a report from an approved laboratory that the aggregates do not exhibit excessive shrinking properties, in accordance with clause C.14 of appendix C of SANS 1083.

The fineness modulus of the sand aggregate shall not vary by more than 0.2 from the fineness modulus of the sand used in the trial mix. Where the variation in fineness modulus exceeds this limit, the mix shall be adjusted to suit. If the fineness modulus of the fine aggregate varies by more than 0.5 from the sand used in the trial mix, the Employers Agent may call for a new trial mix to be made for re-approval.

PSG 1.2.2 Use of Plums (3.4.2)

The use of plums will only be permitted, if agreed to by the Employers Agent, in mass-fill concrete.

PSG 1.3 Admixtures (3.5)

Unless approved by the Employers Agent, neither admixtures nor air-entraining agents shall be used in any concrete.

PSG 2 Plant (4)**PSG 2.1 Formwork (4.5)**

PSG 2.1.1 Design (4.5.1)

Add to the Sub-Clause:

"The Contractor shall arrange for a professional Employers Agent to design and sign the drawings for the formwork (including all supports to be used for the roof shuttering)."

PSG 2.1.1 Ties (4.5.3)

Add to the Sub-Clause:

"The water tightness requirement of the structure shall be taken into account when deciding upon the type of tie to be used. The cover requirement will apply to ties left permanently in place."

PSG 3 Construction (5)**PSG 3.1 Reinforcement (5.1)**

PSG 3.1.1 Bending (5.1.1)

Add to the Sub-Clause:

"Reinforcement shall be cut with cropping or shearing equipment only. Cutting torches shall not be used."

PSG 3.1.2 Fixing (5.1.2)

Add to the Sub-Clause:

"No welding of reinforcement will be permitted."

PSG 3.2 Formwork (5.2)

PSG 3.2.1 Classification of Finishes (5.2.1)

Delete Clause 5.2.1(b) and replace with:

"This finish shall be obtained by the use of steel-faced forms arranged in a regular pattern to fit the appearance of the structure. After stripping, all small fins, bulges and other projections shall be removed, surface honeycombing, surface discolorations and other irregularities repaired and the surface rubbed to from a smooth finish of uniform texture and colour. The finish shall be to Degree of Accuracy 1 tolerances defined in Clause 6.2.2 and 6.2.3."

Add to the Sub-Clause 5.2.1 (c) :

"The quality of the formwork to the external surfaces shall fall within the "Special" category and shall be such that no after-treatment e.g. rubbing down, other than the sealing of ferrule holes (which themselves shall be placed with precision in a regular pattern) will

be necessary. The formwork used shall be unblemished and erected in a regular pattern so that the joints shall be a feature of the finished surface which shall be to Degree of Accuracy 1 tolerances as defined in Clauses 6.2.2 and 6.2.3."

PSG 3.2.2 Removal of Formwork (5.2.5)

Rephrase the first two lines of 5.2.5.2 to read:

"For this purpose and except as allowed in 5.2.5.3, the formwork shall remain in place, after all the concrete has been placed in the relevant lift, for the appropriate minimum period of time given in 5.2.5.2 Table 2"

PSG 3.3 Holes, Chases and Fixing Blocks (5.3)

Add:

"Fixing blocks for the attachment of fixtures may be embedded in concrete if the strength or any other desirable feature (such as appearance) is not, in the opinion of the Employers Agent, impaired thereby."

PSG 3.3.1 Chamfers (New Sub-Clause)

Unless otherwise noted on the drawings, all exposed sharp edges shall be chamfered 20 x 20 mm.

PSG 3.4 Pipes And Conduits (5.4)

Add to the Sub-Clause:

G.M.S. Ventilation Pipes are required to be supplied and constructed into the roof slab of the reservoir in position as shown on the drawings. Each G.M.S. Ventilation Pipe is to be provided with a puddle flange, and the exterior opening is to have an "insect proof" galvanised wire mesh cover."

PSG 3.5 Concrete (5.5)

PSG 3.5.1 Quality (5.5.1)

PSG 3.5.1.1 Consistency (5.5.1.2 (b))

Delete the paragraph (b) and substitute the following:

(b) by the Employers Agent in respect of prescribed mix and strength concrete, or

PSG 3.5.1.2 Durability (5.5.1.5)

Add to the Sub-Clause:

"The exposure conditions at the site of the works are to be considered as being severe."

PSG 3.5.1.3 Prescribed Mix Concrete (5.5.1.6)

Ignore the fourth to tenth lines inclusive from the sub-clause and substitute the following;

"The grades of prescribed mix concrete are designated 20, 15 and 10 and are composed of cement, sand and stone, as specified herein before, proportioned as listed in the accompanying table.

While the proportion of cement to the combined quantity of sand and stone must remain constant for each grade of concrete, as set out in the table, the relative proportions of sand and stone are to be adjusted if required by the Employers Agent, so as to attain the most suitable consistency of concrete, due allowance being made for the bulking of sand due to moisture.

Grade	Size of stone (mm)	Cement (kg)	Sand (m³)	Stone (m³)
20	19	50	0.11	0.140
15	19	50	0.13	0.160
10	37.5	50	0.16	0.22

The addition of water shall be regulated by the use of properly calibrated containers, only sufficient water being added as will in the opinion of the Employers Agent, afford a workable mix.

The fine and coarse aggregate approved for use in strength concrete Grades 30 and 25 are to be used for prescribed concrete mixed Grades 20 and 15.

PSG 3.5.1.4 Strength Concrete (5.5.1.7)

Replace the contents of the sub-clause with:

"The grades of strength concrete are designated Grade 30 and Grade 25 and are composed of cement, sand and stone, as specified herein before, proportioned as listed in the accompanying table.

The concrete mixes for Grade 30 and Grade 25 strength concrete shall be designed by the Portland Cement Institute's laboratory nearest to the site of the Works, or other competent laboratory approved by the Employers Agent.

Grade	Size of stone (mm)	Cement (kg)	Sand (m³)	Stone (m³)
30	19	50	0.080	0.110
25	19	50	0.095	0.125

The concrete mix for Grade 35A strength concrete shall be OPC Fly ash (FA) or slag are to be factory blended into a mixture such that the FA forms 25% by mass of the combined mixture. The maximum and minimum cementitious mixture contents of the concrete shall be 450 and 325 kg/m³ respectively. The maximum water content shall be 200 l/m³ and the minimum cement/water ratio shall be 2.0. curing of the concrete to be strictly in accordance with SANS 2001-CC1 :2007 and SANS 0100-2 clause 20.8

At least three weeks before placing any strength concrete on the Works, the Contractor shall supply and deliver to a laboratory at his own cost, samples of the aggregates he proposes to use in the strength grade concrete. While the proportion of cement to the combined quantity of sand and stone must remain constant for each grade of concrete, as set out in the table, the relative proportions of sand and stone may be adjusted to achieve the requirements of this Specification. The proportions given above are to guide the Tenderer in pricing the grades of strength concrete.

PSG 3.5.4.5 No-fines Concrete (New sub-clause)

No-fines concrete shall be composed of cement and coarse aggregate only, the fine aggregate being, omitted from the mix. The proportions of the cement and stone shall be one part by volume of cement to eight parts by volume of stone. The stone shall comply with the grading requirements of 19 mm single-sized crushed stone to Table 7 of SANS 1083.

Only sufficient water shall be added to the mix to produce a smooth grout to completely cover each and every particular of aggregate.

Proportions may be varied on site with the approval (or to the direction) of the Employers Agent to obtain a more satisfactory result if so directed by the Employers Agent on site. The upper surface of the no-fines is to be finished off with a wood float to provide a smooth working surface while adding just sufficient dry mix mortar (1 to 8) to close the upper surface of the voids in order to prevent the ingress into the interstices of foreign matter.

Mixing shall be carried out in a mechanical batching plant and the hopper shall first be charged with the aggregate to which a small quantity of water has been added to moisten the aggregate particles. The cement shall then be added and shall be followed by the remainder of the water.

The no-fines concrete shall be placed within 20 minutes of having been mixed and shall be rodded and hand tamped into position. The use of vibrators will not be permitted.

No traffic shall be permitted to traverse the surface of the no-fines concrete during the three days following upon the placing of the no-fines concrete and then only over planks or boards placed for this purpose.

PSG 3.5.2 Batching (5.5.2)

PSG 3.5.2.1 Aggregates (5.5.2.3)

Add to the Sub-Clause:

"Batching is to be by mass using an approved type of weigh-batching plant."

PSG 3.5.3 Mixing (5.5.3)

PSG 3.5.3.1 Ready Mixed Concrete (5.5.3.2)

Delete the first sentence and substitute the following:

"Concrete produced at a central concrete production facility other than at the site of the Works shall only be accepted for use in the Works with the prior and express approval of the Employers Agent. When such approval has been given, the Employers Agent shall then decide whether or not to accept the test results obtained by the facility concerned."

PSG 3.5.4 Placing (5.5.5)

PSG 3.5.4.1 Dropping Concrete Freely (5.5.5.5)

Replace the contents with:

"Dropping concrete freely will only be permitted if the Employers Agent is satisfied that this is the only practical method of placing."

PSG 3.5.4.2 Pumping of Concrete (5.5.5.9)

Delete the sub-clause 5.5.5.9 and substitute the following:

"The placing of concrete by pumping will not be permitted."

PSG 3.5.4.3 Placing in Continuous Walls (New Sub-Clause)

Add new sub-clause:

In the case of continuous walls, these are to be cast in lifts of such height that each lift can be poured uninterruptedly in one continuous operation over the entire perimeter of the wall. No vertical or inclined construction joints of any kind will be permitted in continuous walls unless they have been specifically ordered or authorised by the Employers Agent. The placing of concrete shall commence at convenient points on the perimeter of the wall and shall proceed both ways simultaneously so that fresh concrete meets fresh concrete. Any rest pauses, such as for meals, shall be avoided as far as possible, and the Contractor may be required by the Employers Agent to make the operation continuous by working shifts. A workable arrangement must be made before each concreting operation commences.

PSG 3.5.4.4 Blinding Layer (New Sub-Clause)

Add new sub-clause:

Beneath all structural grades of concrete or elsewhere, if so ordered by the Employers Agent, or shown on drawings, the bottom of the excavation is to be covered by a blinding layer (screed) in Grade 15/20 concrete to a specified depth to prevent disturbance of the ground and to serve as an even and accurate positioned working floor for setting steel and placing foundation concrete. This blinding layer shall be laid immediately after excavations have been taken out and trimmed to the required depths and have been inspected and approved by the Employers Agent.

PSG 3.5.4.5 Under-drainage Layer (New Sub-Clause)

Add new sub-clause:

Quantities have been included in the Schedule of Quantities for the placing of a no-fines concrete under-drainage layer between the top of the blinding and the underside of the structural concrete floors where shown on the drawings.

PSG 3.5.5 Construction Joints (5.5.7)

PSG 3.5.5.1 General Preparation of Construction Joints (5.5.7.3)

Delete sub-clauses (a), (b), (c), and (d) and substitute:

All horizontal and vertical construction joints shall be cleaned of all dirt and loose particles and shall be prepared to the satisfaction of the Employers Agent. All intersections of construction joints with concrete surfaces which will be exposed to view shall be made straight and level or plumb and shall be constructed to the details shown on the drawings.

The Contractor shall provide a compressor on site for the whole period during which concreting is in progress, and this must be available for cleaning concrete faces prior to placing fresh concrete or pouring joints.

"Blowing" off may generally be carried out on horizontal surfaces but under special circumstances approved by the Employers Agent it may also be carried out on vertical surfaces. The surface concrete to be prepared shall be between 4h and 8 h old after

completion of placing and shall be blown off using a mixture of air and water under a pressure of at least 500 kPa or by using a high pressure water jet until all dirt, laitance, etc is removed and particles of clean coarse aggregate are exposed sufficiently to produce a rough surface. Any loose particles of coarse aggregate shall also be removed. The success of this method of preparation depends on selecting the correct time (dependent on the type of cement) so that the concrete has set to just the necessary degree of hardness. The operation may therefore require to be undertaken outside normal working hours and at night. When the surfaces are at least 12 h old any remaining loose fine aggregate particles shall be washed off.

"Scabbling", which refers to removal of all surface laitance plus roughening the concrete surface with pneumatic picks in order to expose the coarse aggregate in a uniform pattern, may be carried out on both horizontal and vertical surfaces. The surfaces to be prepared in this manner shall be at least 12 h old after mixing the concrete. At least 35% of the roughened surface area shall consist of exposed coarse aggregate.

All surfaces either prepared, by "blowing-off" or by "scabbling", shall be kept continuously wet until the next lift of fresh concrete is to be placed against them; the minimum time being 12 h.

The use of approved wet-to-dry epoxy resin concrete adhesive, strictly in accordance with the manufacturer's instructions, will be permitted in the formation of concrete joints at surfaces where the concrete is older than 7 days.

PSG 3.5.5.2 Placing Fresh Concrete at Joints (New Sub-Clause)

Vertical construction joint surfaces shall be, as instructed by the Employers Agent, either smooth, clean and kept damp for at least 24 h before placing fresh concrete against them, or scabbled, cleaned and dampened as specified above.

Horizontal construction joint surfaces shall have been "scabbled" or "blown off", cleaned and kept continuously wet as specified above before fresh concrete is placed over them. Immediately before placing the fresh concrete, the damp surface of the set concrete shall be evenly coated (by brushing or brooming) with a layer of cement mortar between 10 mm and 15 mm thick. The water/cement ratio and the cement/sand ratio of this mortar shall be the same as that of the fresh concrete to be placed and the mortar shall be produced by leaving the coarse aggregate fraction out of a batch of the fresh concrete. Coating with mortar is to be done in stages immediately before areas of set concrete are covered with fresh concrete, so that no mortar is exposed for longer than one hour after mixing, or less if the mortar has become dry or has started to set before being covered with fresh concrete. Any dried out mortar shall be removed and, after cleaning the surface, shall be replaced with fresh mortar.

No fresh concrete shall be placed on the top surface of concrete, which is laterally restrained (e.g. by formwork or by in-situ earth) while the top layer of concrete is between 3 hours and 12 hours old after mixing. No fresh concrete shall be placed on top of the concrete with an unrestrained lateral surface while the top layer of concrete is between 2 hours and 12 hours old after mixing.

PSG 3.5.6 Curing and Protection (5.5.8)

Add to the Sub-Clause:

"Notwithstanding the acceptable methods of curing itemised under (a) to (c) of the sub-clause, the walls of thin-wall reservoirs or other structures shall be subjected to continuous spray curing for a minimum period of 7 days."

Delete from the sub-clause all references to the curing periods relating to concrete made with Portland Blast Furnace Cement since the use of the latter is not permitted in terms of the Contract.

PSG 3.5.7 Adverse Weather Conditions (5.5.9)

PSG 3.5.7.1 Hot Weather Concreting (5.5.9.2)

Add to the Sub-Clause:

"When concrete operations are being carried out at ambient temperatures in excess of 32°C, the Contractor shall apply the relevant recommendations for hot weather concreting set out in PCI 305 'Recommended practice for hot weather concreting'."

PSG 3.5.8 Concrete Surfaces (5.5.10)

PSG 3.5.8.1 Exposed Surfaces of Concrete (5.5.10.1)

Add to the Sub-clause:

"Concrete surfaces that require special treatment before or after the striking of forms and the treatment to be given are as detailed in the Schedule of Quantities."

PSG 3.5.8.2 Unformed Concrete Surfaces (5.5.10.2)

Add to the Sub-clause:

"All unformed concrete surfaces shall be finished to one or more of the following classes of finishes:

Class 1 : Screeded Finish

Immediately after being poured the concrete shall be screeded with a straight edge working between templates set accurately to line and level. No mortar shall be added to overcome surface irregularities. These shall be made good by rescreeding or by the addition of concrete.

Class 2 : Wood Floated Finish

After screeding to line and level and when the water sheen has disappeared, the concrete surface shall be trowelled by hand with a wood float to a uniform consolidated surface free from any trowel marks and uniform in texture and appearance.

Class 3 : Steel Trowelled Finish

Commence as for Class 2 and finish with a steel trowel. The final finish shall be done at the correct time, for example, while the concrete is still sufficiently plastic to take polish but when it has hardened sufficiently to prevent drawing water and fine materials to the surface. Any adherence of mortar to the steel trowel indicates that the correct stage has not yet been reached.

PSG 3.5.8.3 Positions of Surface Finishes (New sub-clause)

- a) Top of foundations (external to reservoir wall): Class 1 - Screeded finish.
- b) Top of foundations and slabs (internal to reservoir wall): Class 3 - Steel trowelled finish.

- c) Top of walls: Class 3 - Steel trowelled finish.
- d) Top of roof slab: Class 2 -Wood floated finish.

PSG 3.5.8.4 Tolerances (New sub-clause)

- a) Surface Class 1 shall not vary by more than 6 mm measured from a 3 m straight edge placed anywhere on the surface.
- b) Surface Class 2 and 3 shall not vary by more than 3 mm measured from a 3 m straight edge placed anywhere on the surface
- c) Special surfaces such as bearing seats shall be finished to a higher degree of accuracy, as shown on the drawings."

PSG 3.5.9 Watertight concrete (5.5.11)

Add to this sub-clause the following:

"The reservoir is to be subject to a water tightness test.

No vertical or inclined construction joints of any kind will be permitted in the perimeter walls of water retaining structures unless these have been special ordered or authorised by the Employers Agent."

PSG 3.5.10 Concrete for Water Retaining Structures (New Sub-Clause)

Add new Sub-clause:

"Grade 35A/19 shall be used for the construction of all water retaining structures."

PSG 3.5.11 Pipes and Conduits Embedded in Concrete for Water Retaining Structures (New Sub-Clause)

Add new Sub-Clause:

"Except with the approval of the Employers Agent no pipes other than those shown on the drawings shall be embedded in the concrete."

PSG 3.5.12 Grouting (5.5.13)

Add at the end of the sub-clause the following:

"Grouting shall be done to the instruction of the Employers Agent using materials of suitable consistency as follows. Unless otherwise directed, grouting mixtures shall consist of one part cement to two parts concrete sand by volume, well mixed and with sufficient water added to obtain the required consistency. Where recesses to be filled are of appreciable dimensions, the Employers Agent may direct the Contractor to replace a proportion of sand with fine stone to reduce shrinkage."

PSG 3.5.12.1 Liquid Grout (New Sub-Clause)

Add new Sub-Clause:

"Where liquid grout is required for bolt holes, etc, water shall be added in such quantity that, when the material is thoroughly mixed and stirred, it shall flow readily so as to fill all recesses and air spaces in the work to be grouted. Before grouting any section of the work with liquid grout, the surfaces to receive grout shall first be thoroughly cleaned and flushed with water. The grout shall then be introduced in such a manner as to fill effectively all recesses. When the grout has set the surface of the work shall be finished off flush and smooth with cement mortar."

PSG 3.5.12.2 Grouting of Pipes/Specials through Walls (New Sub-Clause)

Add new sub-clause:

"Where entry holes for pipes / specials have been proofed in the walls, the Contractor shall be responsible for the grouting in of such pipes / specials regardless of whether or not these have been supplied by himself.

Before commencing the positioning in holes of any pipes/specials the Contractor

- (a) Remove all shuttering and boxing remaining in the holes;
- (b) Make any alterations required to the position and shape of the holes;
- (c) Thoroughly clean the sides of the holes so as to obtain, satisfactory bond surface for the new concrete; and
- (d) Free all surfaces of the pipes / specials of all coatings, and thoroughly scrape and clean the pipes / specials.

After accurately positioning the pipes / specials in the respective holes, the Contractor shall fix the pipes / specials in the holes.

Immediately prior to grouting being carried out by the placing of mortar and concrete around the pipes, the surface of the existing concrete shall be saturated with water. All surplus water shall be removed and the surface covered with a layer, approximately 12 mm thick, of mortar consisting of three parts concrete sand and one part cement.

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. Where a watertight seal is required, the concrete shall be carefully worked around the puddle flange, if any, and the pipe barrel of body of the special, shall be vibrated in layers so as to obviate any failing away from pipe / special surfaces of the concrete already placed. The whole shall, when set, forms a dense, homogeneous, and waterproof mass. A spare vibrator with an independent power source shall be kept in readiness to ensure continuity of placing in the event of the breakdown of the duty vibrator.

Smooth formwork that has been suitably strengthened for use with a vibrator shall be provided for facing the concrete around each pipe / special."

PSG 3.5.12.3 Dry-Packed Grout (New Sub-Clause)

Add new sub-clause:

"When dry-packed grout is specified, under base plates etc, only sufficient water shall be added to make the mixture ball when squeezed in the hand. Before any grouting is done with dry caulking the surfaces between which the caulking is to be placed shall first be thoroughly cleaned and flushed with water. All surplus visible water shall be wiped or blown away and the dry caulking shall

be forcefully rammed or hammered into place using suitable tools. Exposed surfaces shall be finished off neatly with a trowel and extensive exposed areas shall be covered with wet sacking and kept damp for at least 24 hours.

Where additives are required for grouting operations, these shall be brought onto site in the manufacturer's unopened containers and used strictly in accordance with the manufacturer's instructions, which the Contractor shall not fail to obtain. If necessary, the Employers Agent may require the Contractor to undertake preliminary tests to check the behaviour of proprietary additives under the conditions obtaining on the site."

PSG 3.5.12.4 Epoxy Grout (Epoxy mortar type only) (New Sub-Clause)

Add new sub-clause:

"The manufacturer's instructions shall be observed when an epoxy grout is used."

PSG 3.5.12.5 Cement Mortar (New Sub-Clause)

Add new sub-clause:

"Where cement mortar is specified for filling around pipes etc. water shall be added to obtain a firm paste, which can be worked with a trowel but is not fluid. Surfaces to receive mortar shall be well wetted and excess water allowed to drain, or be removed. The mortar shall be worked into place with a trowel or tamping rod, exposed surfaces floated off, covered with wet hessian for 24 hours, and allowed to harden without disturbance."

PSG 3.5.13 Joints (New Sub-Clause)

PSG 3.5.13.1 Fibreboard (New Sub-Clause)

Add new sub-clause:

"Fibreboard shall be provided between concrete sections wherever shown on the drawings. Fibreboard shall be impregnated and treated with a special bituminous compound to protect it from weathering, e.g. "F1excell", as manufactured by Expandite (Pty) Ltd or a similar approved board of comparable composition, which shall be securely fixed in position to avoid distortion or displacement while concreting operations are in progress. "

PSG 3.5.13.2 Waterstops (New Sub-Clause)

Add new sub-clause:

"Polyvinyl chloride (PVC) and/or rubber waterstops shall be of approved manufacture and shall be provided with lugs for fixing the minimum elongation at break point shall be 360% at 250C. In the case of PVC waterstops, regenerated PVC will not be accepted. The waterstops shall be of the size and shapes shown on the drawings and as scheduled. Prior to use all waterstops shall be carefully stored to avoid damage or contamination by oil, grease, the sun, etc."

See Particular Specification for further specifications over and above the above.

PSG 3.5.13.3 Joints with Waterstops (New Sub-Clause)

Add new sub-clause:

"Where shown on the drawings, joints shall be formed in concrete work embodying waterstops embedded in the concrete. It is essential that the waterstops are held securely during concreting by using split wooden shuttering and a clamping device for holding the waterstop in position, nailing not being permitted except through the lugs provided for the purpose. The concrete around the waterstop shall be carefully placed and compacted to avoid honeycombing and to ensure full contact between the waterstop and the concrete around the entire periphery of the seal.

After one half of the waterstop has been set into concrete and before the concreting of the succeeding section is commenced, the faces of the concrete against which the succeeding section is about to be cast shall be thoroughly cleaned by brushing with a wire brush, care being taken not to damage the waterstop."

PSG 3.5.13.4 Expansion Joints (New Sub-Clause)

Add new sub-clause:

"Joint recesses to receive sealing compound are to be formed to the dimensions and shapes indicated on the drawings, these recesses are to be formed with rough sides and so shuttered that the shuttering can be removed without any timber having to be left in the recesses. Shuttering shall be left in the joints until the joints are ready for priming and filling with sealant. After the removal of the shutters, joints shall be cleaned by mechanically operated wire brushes and shall be hacked and scabbled and all dust removed."

PSG 3.5.13.5 Sealing Joints (New Sub-Clause)

Add new sub-clause:

"The sealing of the joints (contraction / movement) is to be carried out by the Contractor under the supervision of a representative of the specialist firm supplying the sealing compounds. The Contractor is to be responsible for supplying these approved materials, transporting them to site, storing and using them, as required, and providing all labour, tools, equipment and everything necessary to prime and fill the joints.

Before priming and pouring, the joints recesses are to be thoroughly cleaned and dried out, the use of compressed air is stipulated, to the approval of the Employers Agent.

No sealing of joint recesses is to be carried out until at least 21 days after the adjacent concrete has been cast.

Every care shall be exercised by the Contractor to ensure that the work shall be carried out in accordance with the requirements of this specification and in strict conformity with any special instructions given by the manufacturers for the proper use and treatment of the sealing materials provided by them."

PSG 3.5.14 Anchor bolts to Pipelines (New Sub-Clause)

Add new sub-clause:

"Concrete pipeline anchors at horizontal bends, vertical bends and on steep slopes shall be constructed where directed by the Employers Agent in accordance with type drawings to be supplied. Bolts, clamping straps and reinforcement shall be provided as directed.

In general, anchors will be provided at all horizontal bends in flexibly coupled pipelines and at such vertical bends as the Employers Agent may decide. Details of the anchors will be supplied by the Employers Agent."

PSG 3.5.15 Waterproofing of Roof Slabs (New Sub-Clause)

Add new sub-clause:

"Reservoir roof slabs shall receive at least two coats of a suitable waterproofing compound such as Bituseal Liquid or similar approved. The compound shall be applied strictly in accordance with the manufacturer's instructions. The sealed surface shall be protected from damage both prior to and during the placing of the protective layer of stone detailed on the drawings."

PSG 4 Tolerances (6)

PSG 4.1 Permissible Deviations (6.2)

PSG 4.1.1 Specified Permissible Deviations (6.2.3)

Add to the sub-clause:

"Except for the special smooth and special finish described in PSG 3.2.1 above, where applicable, the Contractor shall work within the limits of the permissible deviations laid down for Degree of Accuracy II with the following modifications:

Foundations:

Position on plan ± 20 mm

Surface level ± 10 mm

Above foundations:

Position on plan ± 20 mm

Surface level ± 5 mm"

PSG 5 Tests (7)

PSG 5.1 Testing (7.2.)

PSG 5.1.1 Laboratory Testing (7.2.3)

Add to the sub-clause:

"The Contractor will be liable for all costs incurred in designing the concrete mixes and making structural concrete cubes and having these tested."

PSG 5.1.2 Water tightness Tests (New Sub-Clause)

Add new sub-clause:

"Unless otherwise ordered by the Employers Agent, all water containing structures shall be tested for water tightness. Each structure shall be filled in four equal stages up to top water level, unless it is obvious that some appreciable leak has developed and that a test is not possible. Rate of filling shall be 24h per stage or 2m height whichever is the smaller.

As soon as the water surface is reasonably steady after filling (approximately 7 days), the water level is to be established. After the stabilising period, the level of the liquid surface should be measured and recorded by the Employers Agent, in relation to a fixed benchmark and recorded at 24 h intervals for a test period of 7 days. This should be by a by means of a suitable gauge to be provided by the Contractor.

If the rate of drop in water level at any stage exceeds 10 mm per 7 day test period, the Employers Agent shall have the right to deem the water containing structure to be not watertight and to notify the contractor accordingly. The Contractor shall forthwith take such steps, at his own expense and to the approval of the Employers Agent, as may be considered necessary to achieve water tightness, other than plastering the floor and inside walls. Any necessary remedial treatment of the concrete, cracks or joints shall be carried out from the liquid face. When a remedial lining is applied, with approval from the Employers Agent, to inhibit leakage it should have adequate flexibility and have no reaction with the stored liquid.

On completion of the remedial work, the Contractor shall again clean out and test the reservoir in the manner specified and at his own expense.

Notwithstanding the fact that a structure may have passed the test described in the aforementioned paragraph, it will not be accepted if there are any leaks or damp spots on any exterior surface. Any such defects shall be sealed and repaired in a manner and to a standard acceptable to the Employers Agent.

Water tightness of concrete roofs shall be tested by the continuous sprinkling of water over the roof with approved sprinklers so that a film of water is maintained on the surface of the slab. The roof shall be considered watertight if there are no damp patches visible on the underside after 48 hours of sprinkling or ponding.

In the event of leakage being evident at any time during the Defects Liability Period the Employers Agent, before issuing his final Certificate may call for further rectification and testing as already described, if he considers such to be necessary, and will have the right to withhold this Certificate until he considers the work to be satisfactory."

PSG 6 Measurement and Payment (8)

PSG 6.1 Measurement and Rates (8.1)

PSG 6.1.1 Reinforcement (8.1.2)

Delete Sub-Clause 8.1.2.1 b)

Delete Sub-Clause 8.1.2.2 a) and replace with:

"Each reinforcement bar size and type will be separately scheduled.

Additional splice lengths or swage type connections introduced at the Contractor's request shall not be measured and will be to the Contractor's account."

Delete from the first line of Sub-Clause 8.1.2.3 a) "of nominal size 25 mm".

PSG 6.1.2 Concrete (8.1.3)

Delete (sub-clause 8.1.3.1(b)) and substitute:

“(b) No allowance will be made for concrete required to make up over break in soft, intermediate or hard rock excavation. No payment will therefore be made for additional concrete or formwork, ordered in writing by the Employers Agent to replace over break.”

Add to the sub-clause 8.1.3.2:

“(e) No fines concrete drainage layers.”

Add to the sub-clause 8.1.3.3 a):

“Any additional precautions required for adverse weather conditions shall be covered in the unit rate.”

Delete from the first line of Sub-clause 8.1.3.3 (a) the words “the cost of the design of the mix in the case of strength concrete,”.

Add the following new Sub-clause after Sub-clause 8.1.3.3. (d):

“(e) Separate items have been included in the Schedule of Quantities for concrete complete with formwork for each particular grade of concrete or for structural units of similar size and shape, or for both. The unit rates shall cover the cost of the provision of concrete (made with ordinary Portland Cement unless otherwise so scheduled); mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking where necessary, together with the cost of all parts of formwork in contact with the concrete and the necessary bearers, struts, and other supports, plus the layout and plant necessary to erect and strike such formwork.”

PSG 6.2 Scheduled Reinforcement Items (8.3)

Delete Unit: t and replace with Unit: kg

PSG 6.3 Waterproofing of Roof Slab (New Sub-clause)

“Waterproofing Reservoir Roof Unit: m²

The unit of measurement of waterproofing shall be the square metre of surface satisfactorily treated. The rate tendered shall include for all materials, equipment and labour, necessary for the satisfactory completion of the waterproofing in accordance with this specification and the manufacturers recommendations. Measurement will be made once only, irrespective of the number of applications required to meet the specification.”

PSG 6.4 Ventilation Pipes (new sub-clause)

“Ventilation Pipes Unit: no.

The unit of measurement of ventilation pipes shall be the number installed in accordance with the specification and the details given on the drawings. The rate tendered shall include for all materials equipment and labour necessary for the satisfactory installation of the ventilation pipes required.”

PSG 6.5 Geofabric (new sub-clause)

“Geofabric Unit: m²

The unit of measurement of geofabric shall be the square metre and measurement will be for the net area actually covered, unless otherwise specified. The rate tendered shall include full compensation for the preparation of the surface, supply, laying, lapping, stitching and jointing as specified by the fabric manufacturer.”

PSG 6.8 Water tightness test (new sub-clause)

“Conduct water tightness test Unit: Sum

The rate shall cover the cost of conducting a complete water tightness test as described in sub-clause PSG 5.1.2.”

PSG 6.9 Disinfect reservoir (new sub-clause)

“Disinfect reservoir Unit: Sum

The rate shall cover the cost of conducting a complete disinfection of the reservoir in accordance with the specifications. The rate shall be inclusive of all costs associated with the plant, labour, material, plant and equipment required for the successful disinfection of the reservoir. Payment shall be made once off for final disinfection prior to commissioning of the reservoir. No additional payments will be entertained. The disinfection process shall be as per Clause PE of the Particular Specifications.”

PSG 7 Measurement and Payment (8)**PSG 7.1 Measurement and Rates (8.1)****PSG 7.1.1 Reinforcement (8.1.2)**

Delete Sub-Clause 8.1.2.1 b)

Delete Sub-Clause 8.1.2.2 a) and replace with:

“Each reinforcement bar size and type will be separately scheduled.

Additional splice lengths or swage type connections introduced at the Contractor's request shall not be measured and will be to the Contractor's account.”

Delete from the first line of Sub-Clause 8.1.2.3 a) "of nominal size 25 mm".

PSG 7.1.2 Concrete (8.1.3)

Delete (sub-clause 8.1.3.1(b)) and substitute:

"(b) No allowance will be made for concrete required to make up overbreak in soft, intermediate or hard rock excavation. No payment will therefore be made for additional concrete or formwork, ordered in writing by the Employers Agent to replace overbreak."

Add to the sub-clause 8.1.3.2:

"(e) No fines concrete drainage layers."

Add to the sub-clause 8.1.3.3 a):

"Any additional precautions required for adverse weather conditions shall be covered in the unit rate."

Delete from the first line of Sub-clause 8.1.3.3 (a) the words "the cost of the design of the mix in the case of strength concrete,".

Add the following new Sub-clause after Sub-clause 8.1.3.3. (d):

"(e) Separate items have been included in the Schedule of Quantities for concrete complete with formwork for each particular grade of concrete or for structural units of similar size and shape, or for both. The unit rates shall cover the cost of the provision of concrete (made with ordinary Portland Cement unless otherwise so scheduled); mixing, testing, placing, compacting, the forming of stop-ends and unforeseen construction joints, striking where necessary, together with the cost of all parts of formwork in contact with the concrete and the necessary bearers, struts, and other supports, plus the layout and Construction Equipment necessary to erect and strike such formwork."

PSG 7.2 Scheduled Reinforcement Items (8.3)

Delete Unit: t and replace with Unit: kg

PSG 7.3 Bituminous Coating To Earth Faces (New Sub-clause)

"Bituminous Coating..... Unit:m²

The unit of measurement of bituminous coating to concrete surfaces shall be the square meter of surface coated. The rate tendered shall provide for all materials, Construction Equipment, tools, labour, etc., necessary for the satisfactory installation of the coating according to the manufacturers specifications."

PSG 7.4 Ventilation Pipes (new sub-clause)

"Ventilation Pipes Unit: m²

The unit of measurement of ventilation pipes shall be the number installed in accordance with the specification and the details given on the drawings. The rate tendered shall include for all materials equipment and labour necessary for the satisfactory installation of the ventilation pipes required."

PSG 7.5 Geofabric (new sub-clause)

"Geofabric Unit: m²

The unit of measurement of geofabric shall be the square metre and measurement will be for the net area actually covered, unless otherwise specified. The rate tendered shall include full compensation for the preparation of the surface, supply, laying, lapping, stitching and jointing as specified by the fabric manufacturer."

PSL MEDIUM-PRESSURE PIPELINES**PSL 1 Interpretations (2)****PSL 1.1 Abbreviations (2.4)**

Add the following:

"HDPE - High Density Polyethylene

MPVC - Modified Polyvinyl Chloride

DI – Ductile Iron"

PSL 2 Materials (3)**PSL 2.1 Steel pipes, fittings and specials (3.4)**

PSL 2.1.1 Pipes of nominal bore up to 250mm (3.4.2)

Add the following:

"The pipes shall be 'normalized' or seamless steel pipes and shall be used with malleable cast iron fittings complying with the requirements of SABS 509."

and delete "shall be screwed" in the second and third lines.

PSL 2.2 Other Types of Pipe (3.7)

PSL 2.2.1 Unplasticized Polyvinyl Chloride (uPVC) pipes

Unplasticized polyvinyl chloride (uPVC) and modified polyvinyl chloride (mPVC) pipes and couplings used for this Contract shall comply with the specifications of SANS 966: 2006 parts 1 and 2 respectively.

PSL 2.2.2 Polyethylene pipes

Polyethylene pipes shall be in accordance with SANS 4427.

Polyethylene pipes and fittings of less than 75mm nominal diameter shall be Type PE100 PN 16 and PE100 PN12.5 for pipes and fittings 75mm nominal diameter and larger and shall be joined by means of compression fittings.

PSL 2.2.3 High Density Polyethylene pipes

High density polyethylene (HDPE) pipes and associated compression couplings used for this Contract shall comply with the specifications of SANS ISO 4427:1996 and shall be product type PE100 HDPE.

PSL 2.3 Jointing material (3.8)

PSL 2.3.1 Loose Flanges (3.8.4)

Add to the Sub-Clause:

Bolts and nuts are to comply with SANS 136.

PSL 2.4 Manholes and surface boxes (3.11)

PSL 2.4.1 Bricks (3.11.1)

Delete the first sentence and substitute the following:

"Bricks shall be obtained from an approved manufacturer and shall be either engineering bricks that comply with the applicable requirements of SANS 227: 2007."

PSL 2.4.2 Sand (New Sub-Clause)

Add new Sub-Clause:

"Sand used for mortar (general purpose) and for plaster (external) shall comply with the applicable requirements of SANS 1090: 2002."

PSL 2.4.3 Polypropylene fittings to be HDPE pipes (new sub-clause)

Add new sub-clause 3.8.8

Where compression fittings and saddle are to be used for HDPE pipes they shall be polypropylene and to be 16 Bar rated.

Only polypropylene compression fittings and saddles of the following brand names, or similar approved, will be acceptable: Philmac, Magnum, Plasson, Astore, Unidelta and Alprene

All polypropylene saddle to have stainless steel reinforcing rings on threaded branches.

All female threaded compression fittings to have stainless steel reinforcing rings around female treads.

PSL 2.4.4 Polypropylene and uPVC fittings to uPVC pipes (new sub-clause)

All uPVC bends must be one class as the connection pipe.

Add new sub-clause 3.8.9

Only polypropylene saddles of the following brand names, or similar approved, will be acceptable: Philmac, Magnum, Plasson, Astore, Unidelta and Alprene.

All polypropylene saddle to have stainless steel reinforcing rings on threaded branches.

PSL 2.6.3. Cement (New Sub-Clause)

Add new Sub-Clause:

"The cement used on the Works shall be CEM 1, grade 42.5 complying with the requirements of SANS EN 197-1: 2000."

PSL 3 Construction (5)**PSL 3.1 Laying (5.1)**

PSL 3.1.1 Depths and cover (5.1.4)

PSL 3.1.1.1 General (5.1.4.1)

Delete the Sub-Clause and substitute the following:

"Except as allowed in sub-clause 5.1.4.3, water mains shall be so laid in road verges and even that the minimum cover from the finished surface level to the top of the pipe barrel is as per PSDB 4.2.1."

PSL 3.2 Jointing methods (5.2)

PSL 3.2.1 Concrete Spigot and Socket Pipelines (5.2.4)

Add to this sub-clause:

"Rubber joint sealing gaskets which comply with the applicable requirements of SANS 676 (or SANS 677) for the type of joint recommended by the approved manufacturer shall be used for making the joint."

PSL 3.3 Valve and hydrant chambers (5.6)

PSL 3.3.1 General (5.6.1)

Replace "Drawing L-1" with "Typical Drawings".

PSL 3.3.2 Construction of Chambers (5.6.2)

Replace "Drawings L-1, L-2 and L-3" with "Typical Drawings".

PSL 3.4 Brickwork in Chambers and Manholes (5.8)

Delete the eleventh line and substitute the following:

"Mortar for brickwork and plasterwork shall be composed of one part of cement to four parts of sand."

Twelfth and thirteenth lines to be deleted.

Add to the Sub-Clause:

"Plaster is to be applied in one coat not less than 12mm in thickness."

PSL 3.5 Lifting and relaying of existing pipes (5.9)

Alter the title to read:

"Lifting, relaying of, and joining into existing pipes"

Add to the sub-clause:

"Where a connection into an existing pipe is required, shall carefully assemble the components of the new connection to ensure that the assembly will fit into the space occupied by the pipe length to be removed. The connection shall be made without undue delay."

PSL 3.6 Marker posts (New sub-clause)

"Marker posts shall be placed to mark valves or the location of a water main as directed by the Employers Agent. Details of the marker posts are shown on the drawings."

PSL 4 Measurement and Payment (8)**PSL 4.1 Schedule Items (8.2)**

PSL 4.1.1 Supply, Lay, Joint and Bed Pipes Complete with Couplings (8.2.1)

Delete the fourth and fifth lines and substitute the following: "the handling, inspecting, transporting, forming joint holes, bedding, laying, jointing, cutting, testing and, when relevant, disinfecting of the pipes and the joints. (See clause 8.2.4)".

Add to this clause:

"Payment for the supply, lay, bedding, backfilling, testing and commissioning of the pipeline shall be made in the following manner:

Pipe laid, jointed, bedded and backfilled.....80% of tendered rate

Pipe successfully pressure tested on site.....10% of tendered rate

Pipe disinfected, commissioned and site cleaned up along trench.....10% of tendered rate"

PSL 4.1.2 Anchor/Thrust Blocks and Pedestals (8.2.11)

Delete the last line and substitute the following: "formwork, concrete, reinforcement (if any), and screeding to top surfaces".

PSL 4.1.3 Valve and hydrant chambers (8.2.13)

Alter the description to read: "Valve, hydrant chambers and hydrant pedestals."

Add: "The rate for hydrant pedestals shall cover the cost of formwork, joint sealants and concrete."

PSL 4.1.4 Marker posts (New Sub-clause).....Unit:No

"Separate items will be scheduled for various marker posts. The rate shall cover the cost of manufacturing and installing or of casting in-situ and painting of the marker posts."

PSL 4.1.5 Connecting to an existing pipeline (New Sub-clause).....Unit:No

"The rate shall cover the cost of cutting into the existing pipeline, as scheduled, any preparation necessary for new fittings to be installed, and the removal of unwanted fittings. New fittings shall be claimed separately."

PSL 4.1.6 Supply, Lay, Joint and Bed Pipes Complete with Butt-weld (8.2.1)

Delete the third, fourth and fifth lines and substitute the following: "The rates shall cover the cost of the handling, inspecting, transporting, jointing by means of butt-welds, bedding, laying, cutting, testing, disinfecting and flushing of the pipes and the joints. (See 8.2.4)".

PSL 4.1.7 Valve and hydrants chambers (8.2.13)

Alter the description to read: "Valve, hydrant chambers and pedestals".

Add: The rate will include for the construction of the fire hydrant shown on the typical drawing including concrete works, pipe fittings and connection to the following reticulation pipes (including the SG Iron hydrant tee):

- (a) 200mm Ø uPVC..... Unit: No.
- (b) 160mm Ø uPVC..... Unit: No.
- (c) 110mm Ø uPVC..... Unit: No.
- (d) 90mm Ø uPVC..... Unit: No.
- (e) 75mm Ø uPVC..... Unit: No.

PSLB BEDDING (PIPES)

PSLB 1 Materials (3)

PSLB 1.1 Bedding (3.3)

Add to the Sub-Clause:

"The bedding for all rigid pipes laid under this Contract shall be of Class A or C (Drawing LB-1) as applicable and scheduled except that joint holes (pockets) shall be provided in the bedding, as per Drawing LB-2, at each pipe joint and coupling. No sharp-edged stones shall come into contact with either the pipes or the couplings (joints). No extra payment will be made for forming joint holes (pockets)."

PSLB 1.2 Selection (3.4)

PSLB 1.2.1 Suitable Material available from Trench Excavation (3.4.1)

Delete the sub-clause and substitute the following:

"The excavation of a pipe trench shall comply with the requirements of Sub-Clause 5.4 of SANS 1200 DB, and the provisions of Sub-Clause 3.7 of SANS 1200 DB (in terms of which, for the purposes of providing bedding materials, the Contractor is not required to use selective methods of excavating) shall apply. Nevertheless, the Contractor shall take every reasonable precaution to avoid burying or contaminating material that is suitable and is required for bedding or covering the pipeline. If, in the opinion of the Employers Agent, bedding material can be produced from the excavated material, the Contractor if so ordered by the Employers Agent, shall screen or otherwise treat the excavated material in order to produce material suitable for bedding (See also Sub-Clause 8.1.2.)."

PSLB 2 Construction Equipment (4)

PSLB 2.1 Placing, compacting and testing equipment (4.1)

PSLB 2.1.1 Placing and compacting (4.1.1)

Replace the sub-clause with:

"The Contractor shall provide adequate tools and equipment for the placing and compacting of the bedding by hand as specified in 5.1.3 and 5.1.4."

PSLB 3 Construction (5)

PSLB 3.1 General (5.1)

PSLB 3.1.1 Trench (5.1.1)

PSLB 3.1.1.1 Width (5.1.1.1)

Replace the Sub-Clause with:

"The Contractor shall so excavate each trench that the width conforms to the requirements of Sub-Clause 5.2 of SANS 1200 DB and its project specification."

PSLB 3.1.2 Compacting (5.1.4)

When sand is used for the bedding of pipes and for backfilling over pipes, the degree of compaction attained shall be 100% of modified AASHTO density.

PSLB 3.2 Selection (3.4)

PSLB 3.2.1 Suitable material, requiring screening, available from trench excavation (new sub-clause)

Copy the sub-clause 8.4.1, but replace the second sentence with:

"The Contractor shall screen the excavated material in order to produce material suitable for bedding or covering the pipeline."

PSLB 3.3 Placing and Compacting Rigid Pipes (5.2)**PSLB 3.3.1 Class 'A' Bedding (5.2.1)**

Delete the first sentence of 5.2.1(a) and substitute the following:

"The pipes shall be supported on a continuous cradle of 20/19 grade concrete".

PSLB 3.3.2 Class B and Class C Bedding (5.2.2)

Delete the third, fourth and portion of the fifth lines and substitute the following:

"The pipes shall be bedded on a continuous mound of selected granular material in the manner shown in Drg LB-3 (b) or (c) as relevant. The remainder of the bedding shall be placed in layers under the overhang and up the sides of the pipe, each layer being compacted, until thicknesses are reached as shown on Drg LB-1 (a) or (c) as relevant".

PSLB 3.3.3 Stone Bedding (New sub-clause)

Add new Sub-Clause:

"Where ordered by the Employers Agent, special drains consisting of 200 mm thickness (See PSDB 5.5) of 6mm to 20mm graded stone extending the full width of the trench shall be provided below the bedding to the pipes. The excavation for these drains will be measured in cubic metres at the rate applying to unsuitable excavation below the bottom of the trench. The stone filling will be measured for payment in cubic metres. All measurements in this connection will be to a width equal to the specified base width of the trench".

PSLB 3.4 Concrete Casing to Pipes (5.4)

Add to the Sub-Clause:

"Where concrete casing is ordered by the Employers Agent it is to be of 20/19 grade concrete with a minimum thickness of 150mm above the top of the pipe".

PSLB 4 Measurement and Payment (8)**PSLB 4.1 Principles (8.1)****PSLB 4.1.1 Supply of Bedding Materials Measured Separately (8.1.1)**

Add to the description:

"Therefore, bedding acquired from alongside the trench that does not require loading, transporting and offloading of the material at the point where it is required, shall not be measured under the supply of bedding materials."

PSLB 4.1.2 Volume of Bedding Materials (8.1.3)

Add to the sub-clause:

a) "The volume of bedding material shall be measured net i.e. the volume of the pipe is to be deducted".

PSLB 4.1.3 Disposal of displaced material (8.1.5)

Replace the contents of this sub clause with the following:

"Material displaced by the pipeline and by importation of material from sources other than trench excavation, shall be disposed of as specified in SANS 1200 DB - sub-clause 5.6.4 and its relevant Project Specification."

PSLB 4.2 Scheduled Items (8.2)**PSLB 4.2.1 Provision of Screened Bedding from Trench Excavation for Pipelines (new sub-clause)**

Add a new sub-clause:

"(a) Screened selected granular material.....Unit: m³

(b) Screened selected fill material.....Unit: m³

The rates shall cover the cost of acquiring, from within 0.5km, insitu trench material, of screening it (10mm sieve), delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material within a free haul distance of 0.5km."

PSLB 4.3

Delete:-(See subclause 8.3.4 of SABS 1200 D or subclause 8.3.4 of SABS 1200 DA as relevant)"

Add:- In the third line of the description:

"at any point within the site of the works" after "to any points alongside the trench".

PSLF ERF CONNECTIONS (WATER)**PSLF 1 Materials (3)****PSLF 1.1 Pipes, Fittings and Couplings (3.1)****PSLF 1.1.1 Polyethylene Pipes (3.1.4)**

Delete the sub-clause and substitute the following:

"High Density Polyethylene (HDPE) pipes shall be in accordance with ISO 4427-2 in material grade PE 80.

Minimum pipe size to be 32 mm ND.

Minimum pipe class to be PN 12.5 (SDR 11) for 20 mm ND and pipe class PN 10 (SDR 13.6) for pipe sizes 25, 32, 40 and 50 mm ND.

Fittings to join HDPE pipes to be 16 Bar rated Polypropylene Compression fittings of the brand names: Philmac, Magnum, Plasson, Astore, Unidelta and Elprene, or similar approved."

PSLF 1.1.2 Saddles (3.1.7)

Delete the sub-clause and substitute the following:

"16 Bar rated Polypropylene Saddles, each with a stainless steel reinforcing ring around the female off-take boss shall be used for 50 mm and 63 mm diameter HDPE pipes and 75 mm, 110 mm, 160 mm and 200mm diameter HDPE pipes. The saddles shall be of the brand names: Magnum, Plasson, or Unidelta or similar approved. Polypropylene saddles of larger sizes may also be used if available.

PSLF 1.2 Stop Taps and Meters (3.2)**PSLF 1.2.1 Stop Taps (3.2.1)**

Delete the sub-clause and substitute the following:

"Stop Taps shall be Stainless Steel (S/S) Ball-Valves complete with stainless steel handle to SANS 1056-2:2006."

PSLF 1.2.2 Meters (3.2.2)

Delete the sub-clause and substitute the following:

"Water Meters shall be in accordance with details shown on typical drawing for Erf connections."

PSLF 1.3 Bedding (3.4)

Add to the sub-clause the following:

"... in accordance with Clause 3.1, Selected Granular material, of SANS 1200 LB unless otherwise ordered. Pipe bedding shall be in accordance with Drawing LB-2 (a) Flexible Pipes of SANS 1200 LB with a minimum trench width of 450mm, with or without the selected fill blanket, as directed by the Engineer."

PSLF 2 Construction (5)**PSLF 2.1 Minimum Pipe Cover (New sub-clause)**

Add new sub-clause 5.7.3:

"Minimum cover to Erf Connection pipes within road verges, under driveways and within erven shall be 600 mm from the finished surface level to the top of the pipe barrel.

Under road surfaces the minimum cover to Erf Connection pipes shall be 800 mm from the finished road surface to the top of the pipe barrel, unless ordered otherwise."

PSLF 3 Scheduled Items (8.2)**PSLF 3.1 Provide Erf Connections Complete (8.2.1)**

Delete the second sentence in the sub-clause and substitute the following:

"The rate shall cover the cost of providing the pipes and fittings for each connection type as detailed on the typical drawing (Saddles and Marker Posts measured separately), excavation in all materials using plant or labour based construction methods as directed, construction of road crossing (including reinstating the road surface), connecting to the saddle and water meter, supplying and placing of bedding material, laying, jointing, backfilling, testing, disinfecting, flushing and completing the Erf Connection."

C3.3.2 PORTION 3: Particular Specifications**PA HEALTH AND SAFETY**

REFER TO **ANNEXURE D** FOR HEALTH AND SAFETY SPECIFICATIONS

PB LABOUR INTENSIVE CONSTRUCTION

The Contractor shall employ labour-intensive construction methods on as great a portion of the Works as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available. The Labour Desk shall be responsible for all labour appointment and community liaison.

PB 1 Construction Activities**PB 1.1 Excavation and backfilling**

All material, including topsoil, shall be excavated by hand if applicable. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which could represent danger or injury to workers shall not be excavated by hand.

PB 1.1.1 Material Suitable for Excavation by Hand

Material suitable for hand excavation shall be classified in accordance with PSD 3.1.2.

PB 1.1.2 Trench Excavation

Materials classified as suitable for hand excavation shall be excavated by hand in trenches having a depth of less than 1.5 metres.

PB 1.1.3 Backfilling to trenches in non-trafficable areas

Backfilling to be done by labour intensive methods.

Backfilling to trenches shall be placed in layers as shown on the Typical Drawings.

Each layer shall be compacted by hand stampers-

- a) To 90% modified AASHTO density;
- b) Such that more than 5 blows of a Dynamic Cone Penetrometer (DCP) is required to penetrate 100mm of the backfill, provided that the backfill does not comprise more than 10 percent gravel of size less than 10mm and contains no isolated boulders, or
- c) Such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

PB 1.1.4 Other Excavation

In all other excavations up to a depth of 1.5 meters, materials suitable for excavation by hand, including topsoil so classified, shall be excavated by hand. Harder material may be loosened by mechanical means for removal by hand.

PB 1.2 Clearing and Grubbing

Grass, shrubs and small bushes shall be cleared by hand.

PB 1.3 Shaping

All shaping shall be done by hand.

PB 1.4 Loading

All loading of material excavated by hand, regardless of the method of haulage, shall be undertaken by hand.

PB 1.5 Haulage

Material excavated by hand shall be hauled to its point of placement by means of wheelbarrows where the haulage distance is not greater than 100 metres and the slope against which the haulage is done is less than 20 percent.

PB 1.6 Off-loading

All material, hauled by tipper trucks, dumpers or wheelbarrow, shall be off-loaded by hand.

PB 1.7 Spreading

All materials, except rock fill, shall be spread by hand.

PB 1.8 Grassing

All grassing shall be undertaken by hand.

PB 1.9 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, shall be collected loaded and offloaded by hand unless acquired from a commercial source.

Placing shall be by hand.

Grout for stone pitching shall be mixed by hand.

PB 1.10 Manufactured Elements

Individual elements designed and manufactured by the contractor, such as manhole rings, cover slabs, concrete planks and pipes, edge beams and the like, shall not have a mass of more than 320kg. The elements shall also be large enough so that four workers can comfortably simultaneously acquire a proper handhold on them.

PB 2 Employment of Local Labour

PB 2.1 Labour Resourcing

Unskilled and semi-skilled labour shall be resourced through the project's Labour Desk.

The Contractor shall endeavour to reach the following labour targets:

60% Women

20% Youth

2% Disabled

18% Men

PB 2.2 Contract of Employment

A Contract of Employment must be completed for each member of the labour force engaged.

A copy of the Contract of Employment completed for each and every member of the labour force engaged shall be given to the Employers Agent prior to the labourer commencing work on this Contract.

PB 2.3 Construction Activity Tasks

PB 2.3.1 Production Rates for Tender Purposes

It will be assumed that the tendered rates, where applicable, have been based on the typical production rates given in Table 1.

Notwithstanding the production rates shown in Table 1, tasks established by the Contractor shall be such that:

- i. the average worker completes 5 tasks per week in 40 hours or less and,
- ii. The weakest worker completes 5 tasks per week in not more than 55 hours.

When it is established that the production rates set by the Contractor does not comply with (i) and (ii) above, the Contractor shall, on instructions by the Employers Agent, revise the production rates to comply with the requirements of (i) and (ii).

PB 2.3.2 Remuneration per Task

The Contractor shall use the minimum hourly rates for calculating task remuneration rates as per Annexure C.

PB 2.3.3 Variations in Production or Remuneration Rates

Where either the production rates or task remuneration are amended during the course of the contract, tendered rates will be adjusted according to the effect such amendment would have on the applicable tendered rates as agreed by the Employers Agent after substantiation by the Contractor. Changes to task and production rates may only be instituted after approval by the Employers Agent.

**Table 1: Typical Task Rates for Labour Intensive Constructive Methods
for Tendering Purposes**

ACTIVITY		Typical Production Rates/Person/Day For Tendering purposes
1.	Trench Excavation 0 to 1m deep	
(i)	In Very Loose/Very Soft material	3.0m ³
(ii)	In Loose/Soft material	2.5m ³
(iii)	In Medium Dense/Firm material	1.7m ³
2.	Grubbing 1metre wide strip	10.0m
3.	Earthworks (incl. load up to 1m lifting)	
(i)	In Very Loose/Very Soft material	4.5m ³
(ii)	In Loose/Soft material	4.0m ³
(iii)	In Medium Dense/Firm material	3.5m ³
(iii)	In Dense/Stiff material	3.0m ³
4.	Wheelbarrow haul	
(i)	0 - 20m	11,5m ³
(ii)	20 - 40m	8,5m ³
(iii)	40 - 60m	6,5m ³
(iv)	60 - 80m	5m ³
(v)	80 - 100m	4,5m ³
5.	Backfilling using sand..... 0 - 1,5m deep	3,5m ³
6.	Placing pipe bedding	2.5m ³
7.	Concrete	
(i)	Mixing	1,5m ³
(ii)	Placing	1m ³
8.	Laying blockwork/brickwork	
(i)	Per packer	50m ²
(ii)	Per team member	3,5m ²

BUILDING WORK (GENERAL)**PB 3 SCOPE**

This specification covers Methods and Materials to be used for general building work not covered under the relevant SANS 1200 Standardised Specifications for Civil Engineering Construction.

PB 4 INTERPRETATIONS

These Particular Specifications shall take preference in situations of conflict with the relevant SANS 1 200 Standardised Specifications for Civil Engineering Construction.

PB 5 Materials**PB 5.1 Lime**

Lime shall be hydrated bedding mortar lime complying with the requirements of SANS specification 523.

PB 5.2 Cement

Cement shall be CEM 1, grade 42.5 cement with the requirements of SANS ENV 197-1 and slow-setting cement shall comply with CEM 11 A-5 grade 42.5.

PB 5.3 Sand

Sand shall comply with the requirements of SANS 1090.

PB 5.4 Lime Mortar

Lime mortar shall be composed of four parts by volume of sand and one part by volume of lime. The material shall be mixed dry until of uniform colour, and then water added and the mixture turned over until the ingredients are thoroughly incorporated. Lime mortar not used on the day it is mixed shall be kept moist until required for use by covering with wet sacks or other approved means.

PB 5.5 Cement Mortar

Cement mortar, unless otherwise specified, shall be composed of five parts by volume of sand and one part by volume of cement, mixed as above described for lime mortar. Cement mortar shall be produced in such quantities as can be used before commencing to set, as no cement mortar that has once commenced to set shall be used in any way. Care shall be taken when mixing cement mortar to remove from the mixing machine or platform any old mortar that has already set, as such mortar must not be incorporated into any new batch.

PB 5.6 Compo Mortar

Compo mortar, unless otherwise specified, for non-load bearing brickwork shall be composed of ten parts by volume of sand, one part lime and one part cement and for load bearing brickwork shall be composed of six parts by volume of sand, one part lime and one part cement. The cement shall be mixed with the lime mortar immediately before use with the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencing to set, as no compo mortar that has once commenced to set shall be used in any way.

NB: Patented masonry cement may be used in lieu of compo mortar if approved by the Employers Agent.

PB 5.7 Burnt Clay Bricks

Burnt clay bricks shall comply with the requirements of SANS 227 in the following classes:

- (a) General purpose (special)- for general brickwork.
- (b) General purpose (special)- extra hard burnt for foundations and brick lintels.
- (c) General purpose (special) -specially selected for fair-faced work.
- (d) Facings- for all external and internal face work.

Face bricks for new work shall be of the type and manufacture specified. Where required to match existing work, the choice of facing bricks must be carefully controlled to match, in colour and texture, the existing work.

All bricks shall also be equal in all respects to the samples submitted to and approved by the Employers Agent.

PB 5.8 Firebricks

Firebricks shall be of well-burnt refractory fireclay and shall comply with the requirements of SANS specification 35 and of same size as the ordinary bricks.

PB 5.9 Damp-proof Sheeting

Sheeting used for damp-proof courses shall be of black polyethylene sheeting complying with SANS Specification 952 Type B having embossed surfaces, 0.38 mm thick (375 microns) and manufactured in widths of less than 1000 mm.

Sheeting used as a damp-proof membrane under surface beds shall, unless otherwise specified, be of green polyethylene sheeting complying with SABS Specification 952 Type C, plain surface, 0.25 mm thick (250 microns) and manufactured in widths of 1 000 mm and greater.

The waterproofing system for flat concrete roofs shall be manufactured in accordance with SANS 0157.

PB 6 Construction Equipment

The Contractor shall provide adequate Construction Equipment for the successful completion of the building work required under this contract.

PB 7 Construction**PB 7.1 Brickwork****PB 7.1.1 General**

Brickwork wherever practicable and not otherwise specified, shall be built in English bond. No false headers shall be used, and none but whole bricks employed, except where legitimately required to form bond. The brickwork, unless otherwise specified, shall

be built in cement mortar. The bricks shall be laid on a solid bed of mortar and all joints thoroughly grouted up solid throughout the whole width of each course. The brickwork shall be carried up in a uniform manner, no one portion being raised more than 1,2 m above another at one time. The bricks shall be well saturated with water, in the stack or dump, approximately 2 hours before being used. The tops of walls left off shall be well wetted before work recommenced. Rough and fair cutting, cutting of splays, skewbacks, chamfers, etc., shall be properly performed. The Contractor shall form or leave all necessary openings for pipes, etc., and make good after pipes, etc., are fixed in position. Walls generally shall be taken up two courses above panelled ceilings in the same mortar as the wall below and cut between ties, etc.

PB 7.1.2 Brickwork In Cement Mortar

All brickwork in foundations and elsewhere where not built upon a damp course, all isolated piers three bricks wide and under, half brick thick walls and chimney stacks above ceiling level, shall be built in 5:1 cement mortar. Brick arches and brick lintels shall be built in 3:1 cement mortar.

PB 7.1.3 Mortar Joints

Mortar joints to brickwork generally shall be 10 mm in thickness. The joints in brickwork receiving plaster, tiling or similar finishings, shall be raked out whilst the mortar is soft to form key for the plaster or mortar backing. The depth of the raking out will depend on the condition of the bricks; the rougher the bricks on face the shallower the raking out and the smoother the bricks the deeper the raking out. The joints in brickwork shall be flushed off where walls are to be bagged, in readiness for the bagging.

PB 7.1.4 Grout In Joints In Brick Foundation Holes

All joints in brick foundation walls shall be grouted in solid with liquid cement mortar to obviate any crevices for ant tracks, where so described.

PB 7.1.5 Brickwork In Thicknesses

Walls built in two or three brick thicknesses shall be tied together with metal ties in accordance with SABS 28 and shall be of the Butterfly or of the Modified FWD Type only, and of sufficient length to allow not less than 75 mm of each end to be built into the brickwork and shall be spaced not more than 1m apart to every third course and shall be staggered.

PB 7.1.6 Brickwork In Linings

Linings to concrete shall be tied thereto with 4 mm diameter galvanised crimped wire ties bent at ends and of necessary length to allow 75mm to be bedded into concrete and 75mm of the other end to be built into brickwork and evenly spaced 1m apart to every third course and staggered.

PB 7.1.7 Half Brick Thick Walls

Half brick thick walls shall be built in 5:1 cement mortar and reinforced with 75mm wide brick reinforcement as described in Clause PC 5.9 one row to every eighth course in height and built 100mm into main connecting walls. The reinforcement shall be lapped 150mm at end joints, where these are necessary, and 75 mm at angles.

PB 7.1.8 Cavity Walls

Cavity walls, unless otherwise specified, shall be built with two half brick thicknesses of brickwork in stretcher bond with 50mm cavity between, and the two thicknesses tied together with 200mm long metal wall ties, spaced at not more than 1 metres centres alternately to every third course of brickwork. The ties shall comply with the requirements of SABS specification 28 and of the Butterfly or of the Modified FWD type only. Unless otherwise specified, the brickwork shall be built in compo mortar. The cavities shall be carried up from one course of brickwork below damp course level up to two courses below roof plate level, unless otherwise shown or specified. The brickwork above cavities shall be built solid and where 270mm thick shall be cut and well bonded where possible.

The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. The tops of walls shall be covered with planks or sacking during wet weather to prevent rain from entering the cavities. The cavities shall not be ventilated. Sills to windows shall be divided into external and internal thicknesses with strips of damp-proof sheetings. Unless otherwise specified, cavities shall be stopped one course below and one course above and 110mm from sides of openings for air bricks and the like.

PB 7.1.9 Reinforced Brick Lintels

Reinforced brick lintels shall be built with sound machine made burnt clay bricks, in 3:1 cement mortar, with all vertical and horizontal joints filled solid with mortar throughout the required number of courses and to a distance of at least 330 mm on either side of the clear opening. The number of courses in lintels over the various size openings shall be as specified in table hereunder and reinforcing steel wires or rods shall be built into the first horizontal joint over the bottom course as laid down therein, viz:

Clear or daylight span	Number of courses	Reinforcement
Not exceeding 1m	4	One row of 75mm wide brick reinforcement as described below, for each half brick width of soffit.
Over 1m up to 1,5m	6	Ditto.
Over 1.5 m to 2m	7	Three 6.3 mm diameter mild steel rods for each half brick width of soffit

Brick reinforcement shall be of hard drawn mild steel comprising two 3.15mm diameter main wires spaced 75mm apart and 2.8mm diameter cross wires spaced at not exceeding 300mm apart, welded to main wires. The reinforcing wires and rods shall be of length at least equal to the width of the clear opening plus 330mm at each end. The reinforcement shall be evenly spaced in the brick joints, with the outer wires or rods having at least 20mm cover from face of brickwork.

Brick lintels in 270mm thick cavity walls shall be built in two half brick thicknesses in stretcher bond and space between the two thicknesses filled in solid with Class 20/19 concrete. The lintels, except where built over pressed steel doorframes and the like, shall be supported on temporary formwork left in position for at least 14 days.

PB 7.1.10 Beam Filling

Beam filling, unless otherwise specified, shall be half brick thick, built in similar mortar as used in the walls below, cut in between

roof timbers and carried hard up to underside of roof covering and flushed up in mortar.

PB 7.1.11 Bagged Finish To Brickwork

Bagged finish to brickwork, if done whilst the mortar in joints is still soft, shall be formed by rubbing over the wall surfaces with wet rough sacking, until all joints and crevices are filled up and an even surface is obtained. Mortar, as used for building the brickwork, shall be added as may be necessary. If bagging to walls is done after the mortar in joints has set the wall surfaces shall be rubbed over with wet rough sacking as above, but cement grout shall be added as necessary to fill the joints and crevices and to obtain an even surface.

PB 7.1.12 Raking out for and Pointing Flashings

Brick joints shall be raked out where required for fixing cover flashings and flashings shall be pointed with 3:1 cement mortar.

PB 7.1.13 Mastic Pointing

Where steel door and window frames are specified to be pointed with mastic compound they shall be pointed all round externally with an approved waterproof compound, of such composition that it will not stain surrounding surfaces, and that it will adhere tenaciously, remain plastic without sagging or running, be capable of accommodating any normal movement of the joint sealed, and will receive paint without "bleeding". The pointing material shall be forced into the joints, which shall have been previously prepared to receive same, by means of a pressure gun, or by other suitable method, all in accordance with the manufacturer's instruction.

PB 7.1.14 Building In

Ends of timbers, holdfasts, cramps, gratings, airbricks, dowels, etc., shall be built-in in cement mortar. Door and window frames, lift door frames and the like shall be set up in positions for building in and securely strutted to prevent distortion whilst the brickwork, lintels etc., are being built. Pressed steel doorframes and lift doorframes shall be grouted in solid at back with cement mortar as the work proceeds. Wood slips, fixing bricks, hoop iron roof ties, etc., shall be built in as the work proceeds.

PB 7.1.15 Fixing Special Doors and Ventilators

Special doors and ventilators shall not be built into walls as the work proceeds but shall be set up and fixed into openings formed in the walls, after plastering, etc., has been completed and secured in position with grip lugs supplied with doors and grouted in solid all round with 3:1 cement mortar, all in accordance with the manufacturer's instructions. Special doors shall swing 25mm clear above finished floor level. Floor and wall finishes made good if disturbed.

Ventilators and the shall be built into openings forll1ed in the walls, in 3:1 cement mortar, and grouted in solid with similar mortar and wall finishes made good if disturbed.

PB 7.1.16 Bedding and Pointing

All door, window and similar frames shall be bedded and pointed in 3:1 cement mortar. All wall and floor plates shall be set true and level and bedded in 5:1 cement mortar. Steel door and window frames shall be carefully pointed all round and made watertight.

Where steel door and window frames are specified to be pointed with mastic compound they shall be pointed all round externally with an approved waterproof compound, of such composition that it will not stain surrounding surfaces, and that it will adhere tenaciously, remain plastic without sagging or running, be capable of accommodating any normal movement of the joint sealed and will receive paint without "bleeding". The pointing mattering shall be forced into the joints, which shall have been previously prepared to receive same, by means of a pressure gun, or by other suitable method, all in accordance with the manufacturer's instructions.

PB 7.1.17 Faced Brickwork

Faced brickwork shall be built fair and pointed with a keyed joint or recessed joint as specified. Keyed joint shall mean that the joints are to be pointed with a round jointing tool, well pressed into the joints as the work proceeds and recessed joint shall mean that the joints are to be square recessed to a depth of approximately 6mm formed with a square jointing tool well pressed into the joints as the work proceeds.

Facing bricks shall be sorted by the brick manufacturer at his yard or by the Contractor on the site, to ensure that proper mixing of the bricks within the colour range of each type of facing brick being used is obtained; sudden changes in the general colour of face work in any one type of facing brick will not be acceptable.

PB 7.1.18 Protect and Clean down Brickwork

Angles of face brickwork, reveals, steps etc., liable to damage shall be covered up and protected during the progress of the remaining work, and any damage done shall be made good to the satisfaction of the Employers Agent. Face brickwork and brick and tile cills, copings, etc., shall be cleaned down as the work proceeds and surfaces liable to be soiled by mortar or plaster splashes during the progress of the remaining work shall be covered with paper, pasted on, or by other approved means. At completion of the works, the coverings shall be removed and the surfaces again cleaned down to the satisfaction of the Employers Agent. Any detergent or other materials used in the cleaning down of face brickwork, etc., shall be of such nature that will not harm adjoining paint and way. All tile and other paving shall be thoroughly cleaned off after laying to remove all traces of mortar and other substances, covered up and protected from damage during the progress of the works and again cleaned off at completion.

PB 7.2 Waterproofing

PB 7.2.1 Damp-Proof Course

Horizontal and vertical damp-proof coursing shall be the full thickness of walls above foundations, plus the width of floor plates where these occur, and shall be laid without longitudinal joints. At end joints, angles and intermediate junctions the sheeting shall be lapped for 150 mm. Where so required all laps in the damp-proof course shall be sealed over the whole area of laps as recommended by the manufacturer. Care shall be taken not to tear or otherwise damage the sheeting.

Similar damp-proof course, 120 mm wide x 250 mm long, shall be laid on sleeper piers under floor bearers. Similar damp-proof course, but in unbroken lengths, shall be laid behind all window sills, sealed with an approved bituminous solution to the back of the sills and taken down within the thickness of the wall and under the first full course of external brickwork. No damp-proof course shall be laid directly below the mortar or other bedding material under sills.

PB 7.2.2 Damp-Proof Membrane

Damp-proof membranes shall be laid in the widest practical widths to minimise joints, turned up and dressed to load bearing walls and, if applicable, lapped with the damp-proof course in the walls. All joints shall be sealed with pressure sensitive tape applied over the leading edge of the joint. All cutting of plastic membranes shall be carried out using sharp instruments.

PB 7.2.3 Covering to Flat Concrete Roofs

The work of covering flat roofs shall be carried out by skilled workers who are experienced in this type of work, all in accordance with SABS Code of Practice 021. Surfaces to be covered shall be perfectly dry and, immediately before the material is laid, swept clean of all chips, dust, etc. No burnt mastic shall be used in the work.

Covering to flat concrete roofs shall consist of an approved single layer system of 4 mm thick, torch-on polymer modified bitumen with polyester base, protected on exposed surfaces by UV resistant mineral chip coating applied during manufacture of the sheeting. The sheeting shall be laid in strict accordance with the manufacturer's instructions with 75mm side laps and 100mm end laps, all fully bonded. All concrete surfaces to be covered with torch-on sheeting shall be primed with a suitable bituminous primer at the rate of 3.5 m²/litre and allowed to dry.

PB 7.3 Plastering**PB 7.3.1 Forming Key to Concrete for Plaster Finish**

All surfaces of concrete receiving plaster or similar finishes shall be well wetted and wire brushed immediately the formwork has been removed and slushed over with 2:1 cement grout to form a key for the finish, all to the approval of the Employers Agent. The slushing shall be allowed to set hard before any finish is applied. Where smooth formwork has been used, the surface shall be scrubbed and hacked to the satisfaction of the Employers Agent.

PB 7.3.2 Cement Plaster**PA 7.3.2.1 One coat work on brickwork**

Cement plaster for 1 coat work on brickwork shall be composed of 4 parts of sand to 1 part of cement for internal work and 5 parts of sand to 1 part of cement for external work, all measured by volume, and mixed as described for cement mortar.

PA 7.3.2.2 One coat work on concrete ceilings and beams

Cement plaster to concrete ceilings and beams shall be composed of 3 parts of sand to 1 part of cement, all measured by volume and mixed as described for cement mortar.

PB 7.3.3 Application of Plaster

Walls shall be well wetted before plastering is commenced. The surfaces of plastered walls internally shall be steel trowelled to a smooth, even and true finish. All external plaster shall be finished to a true and even surface with a wood float. All plaster surfaces shall be free from blemish. Plaster shall be returned into reveals and soffits of openings and all angles shall be true and straight with prominent angles slightly rounded.

Cracks, blisters and other defects shall be cut out, made good and the whole left perfect at completion to the Employers Agent's satisfaction.

PB 7.4 Granolithic Finish

Granolithic finish to floors, treads of steps, thresholds and similar horizontal surfaces shall be not less than 25 mm thick, composed of 2 parts granite, or other approved hard stone chippings, or approved hard coarse sharp washed granitic or quartzitic river sand, graded up to a maximum size of 5 mm, ½ part clean pit sand screened through a 2.4 mm mesh sieve and 1 part of cement, and shall be hand or mechanically steel trowelled to a true and smooth surface.

The resulting material when set shall test between 30 and 35 MPa. No dry cement powder or grout shall be applied to the surface.

The granolithic shall be laid before the concrete sub floor has matured otherwise the exposed surface of the concrete shall be thoroughly cleaned with a wire brush and a coat of neat cement grout applied immediately before the granolithic is laid.

The granolithic shall be laid in panels not exceeding 20m² in area and joined to lines of panels with V-joints as directed. The length of any panel shall not exceed 4.5 m and wherever possible the joints between the panels shall coincide with any joints in the concrete sub-floor.

Where granolithic is to be tinted, it shall be laid in two thicknesses in one operation, the lower thickness being brought up to within 6 mm of the finished level and the upper thickness, into which the requisite quantity of approved colouring material has been mixed, shall be laid. NO DUSTING OF COLOURING MATERIAL WILL BE ALLOWED.

Granolithic finish to stair risers, sides of kerbs and other vertical surfaces shall be not less than 12mm thick.

Exposed salient angles of granolithic shall be neatly rounded to approximately 20mm radius.

All granolithic work shall be carried out by experienced workmen and shall be protected from injury caused by rain or other extremes of weather for 12 hours after being laid, and against drying out too rapidly whilst hardening by covering with wet sacks or other suitable material and shall be protected from other injury and discoloration during the progress of the remaining work.

Edges of granolithic floors adjoining other floor finishes, edges of margins, etc. shall be true and sharp, all protected by fixing temporary wood strips which shall remain in position until laying of the adjoining flooring material is commenced.

PB 7.5 Granolithic Skirting

Granolithic skirting shall be formed by turning the granolithic floor finish up against walls and other vertical surfaces hollow rounding the granolithic at junction with floors and finishing the top edge perfectly straight. The skirting shall be at least 75mm high.

Skirting shall finish flush with glazed wall tiling, but shall project approximately 5mm beyond face of plastered wall surfaces and 10mm beyond faces of face brick and bagged wall surfaces. Projecting top edges of a skirting shall be slightly rounded.

All mitres, stopped and returned ends, etc. shall be neatly formed.

PB 7.6 Reeding to Steps Etc.

The treads of steps and upper surfaces of external thresholds finished with granolithic or sand cement finish shall be rendered non-slip by reeding same near front edge for a width of 100mm and stopped 100 mm from ends.

PB 8 Tolerances

The method of measurement and accuracy of dimensions required for the completed building work shall be as described in SANS Code of Practice 0155 (or SANS equivalent) unless otherwise specified in the Project Specifications.

PB 9 Testing

The requirements of Clause 7 of SANS 1 200A - General shall apply.

PB 10 Measurement And Payment**PB 10.1 Basic Principles****PB 10.1.1 General Brickwork**

The basic principles of measurement shall be the net area of brickwork of various thicknesses and quality required.

PB 10.1.2 Special Brickwork

The basic principle of measurement shall be the net area of special brickwork required

PB 10.1.3 Making good brickwork damaged by others for the installation of services.

The basic principle of measurement shall be the net area of brickwork required to be made good after the installation of services by others.

PB 10.1.4 Waterproofing membrane

The water proofing membrane shall be measured as the net area to which the membrane will be applied.

PB 10.1.5 Waterproofing to concrete roofs

Water proofing to concrete roofs shall be measured as the net area to be water proofed.

PB 10.1.6 Granolithic Finish

Granolithic finishes shall be measured as net vertical or horizontal area regardless of the area of application.

PB 10.1.7 Plaster

Plaster shall be measured as net area of plaster required regardless of the extent of the plastered area

PB 10.1.8 Computation of Quantities

Brickwork shall be measured in net area of brickwork taken along the centre line dimensions of the brickwork.

PB 10.2 Scheduled Items

PB 10.2.1 General Brickwork Unit : m²

Separate items will be scheduled for brickwork of different thicknesses and finishing required.

PB 10.2.2 Special Brickwork Unit : m²

Separate items will be scheduled for special brickwork required.

The rate for brickwork and special brickwork shall cover the cost of the supply and delivery of all materials to complete the brickwork, building in the damp-proof course, building the brickwork, cutting bricks where required, wastage, building in windows, doors, roof trusses, brick reinforcement, brick ties, roof hoop irons, conduits and other such like, beam filling, building sills in brickwork where specific, building brick lintels, bedding and pointing of door, window and other such frames in mortar, forming keyed or recessed joints, raking of brick joints as necessary, all other non-specific building requiring brickwork, and protecting and cleaning down the brickwork.

Special brickwork shall be measured separately and separate items will be scheduled for brickwork of different thicknesses and finishing required.

PB 10.2.3 Making good brickwork damaged by others for the purpose of installing services Unit : m²

Separate items will be scheduled for the type of brickwork to be made good.

PB 10.2.4 Supply and lay water-proofing membrane Unit : m²

The rate for the waterproofing membrane shall cover the cost of supply and delivery of the material as specified, and the laying jointing and cutting of the membrane.

PB 10.2.5 Supply and apply covering to concrete roof Unit : m²

The rate for covering concrete roofing shall cover the cost of supply and delivery of the material as specified, and the laying, jointing and cutting of the membrane

PB 10.2.6 Plaster Unit : m²

Separate items will be listed for plaster of different thicknesses

The rate for plaster shall cover the cost of supply and delivery of the material as specified, and the application of the plaster in vertical, horizontal or inclined planes and shall include for the preparation of surfaces to be plastered constructed under this contract

PB 10.2.7 Granolithic Finish Unit : m²

PD VALVES, METERS AND CHAMBERS**PD 1 Scope**

This specification covers the specific requirements for valves and chambers for the project.

PD 2 Interpretations**PD 2.1 Supporting specifications**

Where this specification is required for a project, the following specifications shall, inter alia, form part of the Contract Document:

- a) SANS 1200 A or SANS 1200 AA, as applicable
- b) SANS 1200 D or SANS 1200 DA, as applicable
- c) SANS 1200 G or SANS 1200 GA, as applicable

PD 2.2 Definitions

For the purpose of this specification, the definitions and abbreviations given in the applicable of the specifications listed in PF 2.1 shall apply.

PD 3 Materials**PD 3.1 Concrete**

All concrete work shall be carried out in accordance with the requirements of SANS 1200 G or SANS 1200 GA, as applicable.

PD 3.2 Valves general

Valves shall be of the types specified in the schedule or on the drawings, and shall be capable of withstanding the applicable test pressures. All valves shall be supplied complete with coupling and jointing material. Unless otherwise stated in the Schedule of Quantities or otherwise not applicable, all valves shall be supplied with operating caps. Satisfactory temporary end covers shall be provided to protect threads, flanges and prepared ends of valves from damage during transportation and handling on site.

Valves shall be so transported, stored and handled as to prevent damage. Valves damaged in any way shall be removed from the site at the Contractor's expense.

PD 3.3 Gate valves

All gate valves shall comply with the requirements of SANS 664 and shall carry the SANS mark. The valves are to be cast iron fitted with non-rising spindles and all valves shall be of the resilient seal type except those that are fitted for scour purposes, which shall be the wedge type. The direction of spindle rotation for valve closing will be clockwise.

Gate valves shall be of a class commensurate with a maximum working pressure as defined by the Employers Agent or as shown on the drawings.

The valve trim shall be Type B, gunmetal trim, to SANS 664 i.e. gunmetal seats (body and gate), bronze spindle, and gunmetal spindle nut.

The seating rings on valves up to and including 300mm diameter shall be pressed into undercut recesses, machined into both the gate and valve body in such a manner that the permanent distortion of the seating ring prevents them becoming loose.

PD 3.4 Air valves

The air valves shall be the following Vent-O-Mat types or similar approved:

Reticulation pipelines:	50-90mmØ :	25mm Ø Vent-O-Mat plastic RPS valve.
	110-250mmØ :	50mm Ø Vent-O-Mat RBX valve with sample point.

PD 3.5 Pressure reducing valves

Pressure reducing valves shall be hydraulically operated, diaphragm actuated Bermad control valves for waterworks, Model 720. The flanged bodies shall be ductile iron and have a minimum pressure rating of 16 bar. The tubing shall be copper. The pressure reducing valves shall be fitted with pressure gauges.

PD 3.6 Pressure relief valves

Pressure relief valves shall be hydraulically operated, diaphragm actuated Bermad control valves for waterworks, Model 730. The flanged bodies shall be ductile iron and have a minimum pressure rating of 16 bar. The tubing shall be copper. These shall be fitted with pressure gauges.

PD 3.7 Meters

Meters shall be Meinecke (Sensys) COSMOS WPD meters or similar approved. These shall have flanged, cast iron bodies, fusion bonded sintered epoxy coatings and a pressure rating of 16 bar, unless otherwise shown on the drawings.

PD 3.8 Strainers

The strainers shall be flanged cast iron Meinecke (Sensys) COSMOS WPD-F strainers, or similar approved, with a pressure rating of 16 bar, unless otherwise shown on the drawings. The sieve element shall be the standard stainless steel sieve.

PD 3.9 Gabions and reno mattresses for scour valves

Reno mattresses and gabion baskets shall be in accordance with the SANS 1580 specification. The geotextile shall be grade A2 Bidim or similar approved product. The wire basket shall be made of hexagonal mesh class A galvanised mild tensile steel wire, in accordance with the SANS 675 specification.

PD 3.10 Chamber materials

Materials used to construct chambers shall be as per the requirements of clause *PC Building Work*. Chamber marking shall be done in black road marking paint to SANS 731. *The Contractor shall use a stencil for lettering, ensuring each letter is at least 100mm in height and will be deemed to be included in the rate tendered.*

PD 3.11 Locks

The Contractor shall supply keyed-alike locks for each lockable manhole cover installed. These shall have solid brass bodies with stainless steel shackles, such as Viro 50mm, or similar approved, and will be deemed to be included in the rate tendered.

PD 4 Construction Equipment

All tools and equipment for the handling of the material and the proper completion of the work shall be provided by the Contractor.

PD 5 Construction

The layout drawings shall show the positions of all chambers. The Employers Agent shall confirm each of these positions on site.

PD 5.1 Air valve chambers

Air valve chambers and fittings shall be constructed as detailed on the construction drawings:

PD 5.2 Scour valve chambers

Scour valve chambers and fittings shall be constructed as detailed on the construction drawings:

PD 5.3 Isolating valve chambers

Isolating valve chambers and fittings shall be constructed as detailed on the construction drawings.

PD 5.4 Meter chambers

Meters and associated fittings shall be housed in chamber structures constructed as detailed on the construction drawings:

PD 6 Tolerances**PD 6.1 General**

The method of measurement and accuracy of dimensions required for the completed building work of the chambers shall be as described in SANS Code of Practice 0155, unless otherwise specified in the Project Specifications.

PD 7 Testing**PD 7.1 General**

The pipework and fittings of the completed chambers shall be subjected to the same hydraulic testing as the lines on which they are constructed.

PD 8 Scheduled Items**PD 8.1 Air valve chambers**

PD 8.1.1 Construct air valve chambers complete with fittings as per details for the following pipelines (pressure ratings as per list on drawings):

- (a) 50mm and 63mm Ø HDPE lines.....Unit: No.
- (b) 75mm - 355mmØ PVCUnit: No.
- (c) 355 to 450mm Ø HDPE Unit: No.

The rates shall cover the costs of supplying and installing all materials and fittings, for the complete air valve installation (chamber, manhole cover, frame & locks, pipework, fittings, wrappings, marking and finishing), including excavation, backfilling around the chamber and connecting to the main pipeline, as per the project specifications.

PD 8.2 Scour valve chambers

PD 8.2.1 Construct scour valve chambers complete with fittings as per details for the following reticulation pipelines (pressure ratings as per list on drawings):

- (a) 50mm and 63mm Ø HDPE lines.....Unit: No.
- (b) 75mm - 355mmØ PVCUnit: No.
- (c) 355 to 450mm Ø HDPE Unit: No.

The rates shall cover the cost of supplying and installing all materials and fittings for the complete scour valve installation (chamber, manhole cover, frame and locks, air vent, pipework, fittings, marking and finishing), as per the project specifications, including excavation, backfilling around the chamber and connecting to the main pipeline, including the reno mattress.

PD 8.3 Isolating valve chambers

PD 8.3.1 Construct isolating valve chambers complete with fittings as per details for the following reticulation pipelines (minimum **16 bar** pressure rating):

- (a) 50mm and 63mm Ø HDPE lines.....Unit: No.
- (b) 75mm - 355mmØ PVCUnit: No.
- (c) 355 to 450mm Ø HDPE Unit: No.

The rates shall cover the cost of supplying and installing all materials and fittings for the complete isolating valve installation (chamber, manhole cover, frame and locks, air vent, pipework, fittings, marking and finishing), as per the project specifications, including excavation, backfilling around the chamber and connecting to the main pipeline.

PD 8.4 Meter chamber fittings

PD 8.4.1 Supply and install fittings and specials complete as per details including all fittings for :

- (a) PVC lines.....Unit: No.
- (b) HDPE lines.....Unit: No.

The rates shall cover the cost of supplying and installing all fittings and specials for the complete assemblies as detailed on the relevant drawings and the project specifications, including connecting to the main pipeline.

PD 8.5 Pressure reducing valve chambers

Pressure reducing and pressure relief valves and associated fittings shall be housed in chamber structures constructed in accordance with the drawings. The rates shall cover the costs of supplying and installing all materials and fittings, for the complete pressure reducing valve chamber (chamber, manhole cover, frame & locks, pipework, fittings, wrappings, marking and finishing), including excavation, backfilling around the chamber and connecting to the main pipeline, as per the project specifications.

PD 8.6 Marking of chambers

PD 8.7.1 Marking of chambers.....Unit: No.

The rate shall cover the costs of supplying all materials and labour for the marking of chambers complete, as per the project specification.

PD 8.7 Locks

PD 8.8.1 Keyed-alike locks.....Unit: No.

The Contractor shall supply keyed-alike locks for each lockable manhole cover installed. These shall have solid brass bodies with stainless steel shackles, such as Viro 50mm, or similar approved.

PE MISCELLANEOUS PIPELINE ITEMS**PE 1 Scope**

This specification covers the specific requirements for the pipelines required for the project.

PE 2 Interpretations**PE 2.1 Supporting specifications**

Where this specification is required for a project, the following specifications shall, inter alia, form part of the Contract Document:

- a) SANS 1200 C, as applicable
- b) SANS 1200 D, or DA, as applicable
- c) SANS 1200 L, as applicable
- d) SANS 1200 LB, as applicable

PE 2.2 Definitions

For the purpose of this specification, the definitions and abbreviations given in the applicable of the specifications listed in PL2.1 shall apply.

PE 3 Materials**PE 3.1 Fittings for PVC pipes***(a) Plastic fittings*

All bends and double socket fittings for PVC pipes shall be class 16 to SANS 966: 2006.

(b) SG iron fittings

All tees, reducers, flange adaptors, end caps and saddles on PVC pipelines shall be spheroidal graphite (SG) iron fittings and conform to the material requirements of SANS 936:1969, grade 42 (19). The socket dimensions shall conform to SANS 966 and shall be rated class 25 working pressure.

Flange adaptors shall be drilled to SANS 1123 Table 16.

Certain reducing tees consist of an equal or reducing tee as well as a reducer. Rates furnished for scheduled reducing tees shall include more than one component, as required.

PE 3.2 Fittings for HDPE pipes*(a) Compression fittings*

All fittings on HDPE pipelines shall be compression fittings and conform to SANS ISO 4427:1996.

PE 3.3 Bolts and nuts

Bolts and nuts to be hot dipped galvanised, are to comply with SANS 136: 1988.

PE 3.4 Fittings for steel pipes

Authentic Viking Johnson couplings and flange adaptors shall be used as specified, where steel pipes and fittings or flanged pipes are used. These shall be for a working pressure of 16 bar, unless otherwise stated.

PE 3.5 Gabion baskets and reno mattresses

The reno mattresses and gabion baskets shall be in accordance with the SANS 1580 specification. The geotextile shall be grade A2 Bidim or similar approved product. The wire basket shall be made of hexagonal mesh class A galvanised mild tensile steel wire, in accordance with the SANS 675 specification.

PE 3.6 Corrosion protection

Approved non-corrosive protective tape shall be used to protect buried non-plastic fittings as ordered by the Employers Agent. The tape used shall conform to SANS 1117: 2007.

PE 4 Construction Equipment

All Construction Equipment for the handling of the material and the proper construction of pipelines shall be provided by the Contractor.

PE 5 Construction**PE 5.1 General**

The pipelines have been routed as far as possible along main roads, tracks and pathways.

Pipelines shall be constructed using long-sections issued by the Employers Agent where applicable. The Contractor shall therefore price the laying of these pipelines to include the extra work required to comply with the requirements of the long sections.

Trench excavation on this project will generally be done by hand, and is therefore limited to depths not exceeding 1.5 metres, and will be in material that is unlikely to cause trenches to collapse under normal conditions. Shoring of trenches generally should therefore not be required.

The scheduled quantities for pipelines for tender purposes are based on preliminary estimates and may change at Construction stage.

PE 5.2 Pipes above ground

The Employers Agent may order the pipeline to be constructed above ground in some areas. In these instances the above-ground section of pipe shall be steel, as specified, and shall be supported as shown on the construction drawings. The work for above-

ground sections of pipeline have been itemised in the Schedule of Quantities. The pipes and other fittings shall be claimed separately.

PE 5.3 Buried river and donga crossings

The pipeline routes frequently require the crossing of dongas and small rivers which shall require the pipe to be buried and protected over these crossings. Drawings for various buried river and donga crossing options are provided. The Employers Agent shall advise the Contractor as to which option shall be appropriate for each such crossing encountered on site.

Excavation and backfilling for these crossings shall be claimed under 'Excavation', as detailed the Standardized Specification.

PE 5.4 Road crossings

Both gravel road and 'tar' road crossings using concrete sleeve pipes are detailed on the drawings. For gravel road crossings, the use of a 160mm Ø uPVC class 12 pipe sleeve shall be used for pipelines up to and including 63mm Ø.

The concrete sleeve pipes shall be Class 100D (SANS 677: 2003) and shall have OGEE joints.

The 'tar' road through the project area is a reasonably busy road, whereas the gravel roads areas are not heavily trafficked. The Contractor shall provide appropriate signage for the accommodation of traffic.

PE 5.5 Disinfection of pipelines and reservoirs

The Contractor shall disinfect the pipelines as per the specification in accordance with SANS 1200: L, section 5.10. The Contractor shall disinfect the lines using potable water obtained from the bulk pipelines already commissioned under previous phases of this project. No separate payment will be made for disinfection of the pipelines. The Contractor shall endeavour to keep wastage to a minimum.

PE 6 Tolerances

PE 6.1 General

The method of measurement and accuracy of dimensions required for the construction of the complete standpipe unit shall be as described in SANS Code of Practice 0155, unless otherwise specified in the Project Specifications.

PE 7 Testing

PE 7.1 General

Testing shall be as per the Standardized Specifications for pipelines. No separate item has been included in the Schedule of Quantities for providing water for testing the pipelines. The contractor is responsible for supplying water for testing and the Contractor shall endeavour to keep wastage to a minimum.

PE 8 Scheduled Items

PE 8.1 Viking Johnson Fittings

PE 8.1.1 Viking Johnson Maxifit couplings (16 bar unless otherwise indicated).....Unit: No.

The rate shall cover the cost of supplying and installing the specified coupling size complete.

PE 8.1.2 Viking Johnson Maxifit flange adaptors (16 bar unless otherwise indicated)..... Unit: No.

The rate shall cover the cost of supplying and installing the specified flange adaptor size complete.

PE 8.1.3 Viking Johnson Flexlock couplings (16 bar unless otherwise indicated).....Unit: No.

The rate shall cover the cost of supplying and installing the specified coupling size complete.

PE 8.1.4 Viking Johnson Flexlock flange adaptors (16 bar unless otherwise indicated)..... Unit: No.

The rate shall cover the cost of supplying and installing the specified flange adaptor size complete.

PE 8.2 Protective wrapping

PE 8.2.1 Wrap fittings in non-corrosive material as ordered by the Employers Agent.....Unit: No

PE 8.2.2 Wrap lengths of steel pipe in non-corrosive material as ordered by the Employers AgentUnit: No

The rate shall cover the cost of supplying and fixing of the wrapping, as well as the cost of any delay and inconvenience caused by the requirement to wrap. The rate shall also include all primers and any other associated coatings required as per the manufacturer's specifications.

PE 8.3 Pipes above ground

PE 8.3.1 Supply 500mm long Y16 dowelsUnit: No.

PE 8.3.2 Install dowels in rock base for pipe plinth, including drilling and grouting complete.....Unit: No.

PE 8.3.3 Supply and install GMS plinth strap complete with GMS M16 bolts and washers complete.....Unit: No.

The rates for the above items shall cover the cost of all work required to meet the requirements of the construction drawings.

PE 8.4 Buried river and donga crossings

PE 8.4.1 Chip, wash and broom rock surface to prepare for casting concrete.....Unit: m²

The rate shall cover the cost of preparing the rock surface as detailed on the construction drawings. The area shall be measured using the length of pipeline to be encased multiplied by the width of the concrete to be cast.

PE 8.4.2 Drill and install R10 dowel into rock complete with Conbextra GP by Fosroc or similar approved.....Unit: No.

The rate shall include for drilling two holes per installation, as well as supplying and installing the dowel using the specified products.

PE 8.5 Erosion protection

PE 8.5.1 Supply and install reno mattress complete with galvanised basket and geotextile.....Unit: m³

PE 8.5.2 Supply and install gabion basket complete with galvanised basket and geotextile.....Unit: m³
The rates tendered shall be for the supply and complete installation of the specified basket / mattress size, including the geotextile (A2 Bidim). Measurement shall be by volume of mattress or basket installed.

PE 8.5.3 Place and compact erosion protection berms as indicated on site by Employers AgentUnit: m³

The rate shall cover all the costs of Construct Equipment and labour required for the placement and compaction of berms, as directed by the Employers .

PE 8.6 Road crossings

PE 8.6.1 Gravel road crossings complete as per details including the following sleeve pipes:

(a) 160mm Ø uPVC class 12.....Unit: m.

(b) 450 ND concrete class 100D.....Unit: m.

PE 8.6.2 Tar road crossings complete as per details including the following sleeve pipes:

(a) 300 ND concrete class 100D.....Unit: m.

(b) 450 ND concrete class 100D.....Unit: m.

(c) 525 ND concrete class 100D.....Unit: m.

(d) 600 ND concrete class 100D.....Unit: m.

The tendered rates shall be for complete road crossings for various sleeve pipes, as scheduled. These rates shall include all work and materials required for a complete road crossing, including compaction required on road reserves, the sand inside the sleeve pipe and reinstating road surfaces complete with surfacing. The costs of traffic accommodation shall also be included in the rate. All thrust blocks and sleeve ends shall be included in the road crossing rates. The rates shall also include for Trolxer testing do be undertaken as instructed by the Employers Agent.

PF BREAK-PRESSURE TANKS

PF 1 Scope

This specification covers the specific requirements for break-pressure tanks for the project.

PF 2 Interpretations

PF 2.1 Supporting specifications

Where this specification is required for a project, the following specifications shall, inter alia, form part of the Contract Document:

- a) SANS 1200 A or SANS 1200 AA, as applicable
- b) SANS 1200 D or SANS 1200 DA, as applicable
- c) SANS 1200 G or SANS 1200 GA, as applicable

PF 2.2 Definitions

For the purpose of this specification, the definitions and abbreviations given in the applicable of the specifications listed in PG 2.1 shall apply.

PF 3 Materials

PF 3.1 Concrete

All concrete work shall be carried out in accordance with the requirements of SANS 1200 G or SANS 1200 GA, as applicable.

PF 3.2 Break-pressure tanks

PF 4 Construction Equipment

All tools and equipment for the handling of the material and the proper completion of the work shall be provided by the Contractor.

PF 5 Construction

The layout drawings shall show the positions of all break-pressure tanks. The Employers Agent shall confirm each of these positions on site.

PF 5.1 General

Break-pressure tanks shall be the type manufactured by LW Tank Systems: Tel. 039-3130577, email lwts@lantic.net.

The following model may be required:

- Model 04LW10, with 80mm Ø flanged end connections

The new break-pressure tanks shall each be embedded in a 1.5m x 1.5m 25MPa concrete slab, reinforced with Ref. 500 mesh placed centrally in the slab. The tank shall be positioned on bricks in the slab to prevent it from sinking into the reinforcement. The Contractor shall erect shuttering to 200mm above the lip of the tank bottom. Thereafter, concrete to the level of the shuttering shall be cast, embedding the tank in the slab.

The compacted earth beneath the slab shall be to 95% MOD AASHTO density. Excavated material shall be used for backfilling around the slab. All excess soil shall be spread over the surrounding area, as approved by the Employers Agent, in a manner not adversely affecting grass growth.

The exposed inlet, outlet and overflow pipework shall be galvanised mild steel, as itemised in the Schedule of Quantities.

A 1m x 2m x 0.3m reno mattress shall be installed at each overflow pipe end point, as directed by the Employers Agent.

PF 6 Tolerances**PF 6.1 General**

The method of measurement and accuracy of dimensions required for the construction of the complete break-pressure tank unit shall be as described in SANS Code of Practice 0155, unless otherwise specified in the Project Specifications.

PF 7 Testing**PF 7.1 General**

The tanks shall not be subjected to a water tightness test. The connecting pipework shall be visually inspected for leaks by the Employers Agent. Testing of concrete shall be as per the Standard Specifications.

PF 8 Scheduled Items**PF 8.1 Break-pressure tanks**

PF 8.1.1 Supply and install LW Tank Systems break-pressure tanks complete:

(e) Model 04LW10.....Unit: No.

The rate shall cover the costs of supplying the complete tank unit, including standard internal valves and fittings, and embedding it into the concrete base, as described above, including connections to the inlet, outlet and overflow pipes.

PF 8.1.2 External pipework and fittings:

The rates shall cover the costs of supplying and installing of all pipes and fittings, for the complete installation of the inlet and outlet pipes, as per the Project Specifications and drawings supplied for construction.

PG STANDPIPES**PG 1 Scope**

This specification covers the specific requirements for standpipes for the project.

PG 2 Interpretations**PG 2.1 Supporting specifications**

Where this specification is required for a project, the following specifications shall, inter alia, form part of the Contract Document:

- a) SANS 1200 A or SANS 1200 AA, as applicable
- b) SANS 1200 D or SANS 1200 DA, as applicable
- c) SANS 1200 G or SANS 1200 GA, as applicable

PG 2.2 Definitions

For the purpose of this specification, the definitions and abbreviations given in the applicable of the specifications listed in PG 2.1 shall apply.

PG 3 Materials**PG 3.1 Concrete**

All concrete work shall be carried out in accordance with the requirements of SANS 1200 G or SANS 1200 GA, as applicable.

PG 3.2 Pipework and fittings

Standpipes shall be connected to the main reticulation pipelines with 20mm Ø HDPE pipe, with a class to suit the main pipeline. Saddles and ¾" male threaded BSP adaptors shall be used to connect the 20mm Ø HDPE pipe to the main pipelines. Saddles on PVC pipelines shall be spheroidal graphite (SG) iron fittings and conform to the material requirements of SANS 936:1969, grade 42 (19). Saddles on Compression saddles for HDPE pipelines shall conform to SANS ISO 4427:1996.

PG 4 Construction Equipment

All tools and equipment for the handling of the material and the proper completion of the work shall be provided by the Contractor.

PG 5 Construction

The layout drawings shall show the positions of all standpipes. The Employers Agent shall confirm each of these positions on site.

PG 5.1 General

All standpipes installed shall be brass type garden taps Cobra or similar approved.

PG 6 Tolerances**PG 6.1 General**

The method of measurement and accuracy of dimensions required for the construction of the complete standpipe unit shall be as described in SANS Code of Practice 0155, unless otherwise specified in the Project Specifications.

PG 7 Testing**PG 7.1 General**

The tanks shall be subjected to the same hydraulic pressure tests as the pipelines on which they are installed.

PG 8 Scheduled Items**PG 8.1 Standpipes**

PF 8.1.1 Supply and install standpipes complete.....Unit: No.

The rate shall cover the cost of the supply, installation and testing of the standpipe complete as per the drawing, including 20mm Ø connection pipe and ¾" male threaded BSP adaptor and reducer.

PH HDPE PIPES AND FITTINGS**PH 1 Normative Reference – SANS ISO 4427**

The normative references listed under Clause 2 of SANS ISO 4427 are updated as follows:-

ISO 1133:2005; Plastics – Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.

ISO 1167:2005; Thermoplastics pipes for the conveyance of fluids – Resistance to internal pressure – Test method.

ISO 2505-1:2005; Thermoplastics pipes – Longitudinal reversion – Part 1: Determination methods.

ISO 2505-2:2005; Thermoplastics pipes – Longitudinal reversion – Part 2: Determination parameters.

ISO 3126:2005; Plastic pipes – Measurement of dimensions

ISO 4607:1978 is replaced by ISO 16871:2003.

ISO 6259-1:1997; Thermoplastics pipes – Determination of tensile properties – Part 1: General test method.

ISO 6259-3:1997; Thermoplastics pipes – Determination of tensile properties – Part 3: Polyolefin pipes.

ISO/TR 9080:2003; Thermoplastics pipes for the transport of fluids – Methods of extrapolation of hydrostatic stress rupture data to determine the long-term hydrostatic strength of thermoplastics pipe materials.

ISO/TR 10837:1991 has been withdrawn.

ISO 11420:1966 has been withdrawn and replaced with ISO 18553:2002.

ISO 11922 -1:1997; Thermoplastics pipes for the conveyance of fluids – Dimensions and tolerances – Part 1: Metric series.

ISO 12162:2009; Thermoplastics materials for pipes and fittings for pressure applications -- Classification, designation and design coefficient.

ISO 13949 has been withdrawn and replaced with ISO 18553:2002.

ISO 16871:2003; Plastic piping and ducting systems – Plastic pipes and fittings – Method for exposure to direct (natural) weathering.

ISO 18553:2002; Method for the assessment of the degree of pigment or carbon black dispersion in polyolefin pipes, fittings and compounds.

Other specifications that form part of these specifications include the following:

SANS 10268: Welding of Thermoplastics – Welding Processes

ISO 21307: Plastic pipes and fittings – Butt fusion jointing procedures for polyethylene (PE) pipes and fittings used in the construction of gas and water distribution systems.

SANS 6269: Welding of Thermoplastics – Test Methods for Welded Joints

ISO 13953: Polyethylene (PE) pipes and fittings – Determination of the tensile strength and failure mode of test pieces from a butt-fused joint.

DIN 16963-4: Pipe Joint Assemblies and Fittings for HDPE Pressure Pipes

BS 4504: Circular Flanges for Pipes, Valves and Fittings (PN designated)

PH 2 Materials

- (i) The polymer compound obtained from suppliers for the manufacture of the pipes shall be supplied ready to be used without requiring additional in-house mixing or master batching of antioxidants, UV stabilisers, pigment, carbon-black or any other modification.
- (ii) Only pre-compounded PE100-designated raw material shall be used for the manufacture of the pipes. Pipes manufactured from reworked material as per 3.4 of SANS ISO 4427 shall not be accepted under this contract.

PH 3 Manufacture

All HDPE pipes and fittings shall be manufactured by a reputable company that complies with all of the following criteria:

- specialises in the manufacture of HDPE pipes and fittings, and
- is accredited by SANS to manufacture HDPE pipes and fittings to SANS ISO 4427, or in the case of foreign manufacturers, the national equivalent of the country of origin, provided that such standards shall contain similar or more stringent requirements, and
- is registered with the Southern African Plastic Pipe Manufacturers Association (SAPPMA), or in the case of foreign manufacturers, the national equivalent of the country of origin, provided that such manufacturing/quality control body shall contain similar or more stringent requirements.

Every pipe or pipe section shall be individually marked so that the pipe or pipe section can be traced back to the batch of pipe manufactured.

Every pipe shall carry both the SANS logo and the registered SAPPMA logo together with other data such as the pipe size, PN rating, batch number etc.

PH 4 Pipe location, handling and acceptance

Pipes are to be delivered, offloaded and stacked in staking areas according to each pipe size and class and clearly labelled.

The following must be applied when handling pipes;

- Fabric slings shall be used for lifting and handling the pipes in order to prevent damage. Where wire ropes or chains are used as slings, all the contact points between the slings and the pipe shall be protected by suitable padding. Where cane grabbing/loading machines are used suitable padding shall be used on the grabbers to avoid damaging the pipes.
- Pipes shall not be lifted by placing hooks into the ends of the pipes.
- Pipe lengths greater than 6 metres shall be lifted using a spreader bar, and wide band slings. Care shall be taken to prevent damage to pipe ends or end fittings arising from contact with the ground when placing the pipes. Pipes shall be centred in the slings before lifting.
- Pipes shall not be pushed, rolled or dropped off the transport trucks and/or trailers.
- Pipes shall not be dragged over the ground either manually or by machine. If dragging the pipes is the only method of getting the pipes to their destination then they must be dragged over rollers or poles continually placed and replaced at appropriate centres beneath the pipe during the dragging process to ensure that the pipe slides over the rollers at all times and does not drag over the ground.
- Where stockpiling of pipes occurs, they shall be re-stacked in pyramid fashion or rectangular (square) fashion with alternative rows orientated through 90°. The bottom row of pipes stacked in pyramid fashion shall be restrained against sideways movement while the outer pipes of each layer stacked in rectangular fashion shall be chocked to prevent the pipes from rolling off the stack when the pipes are retrieved for pipe line construction purposes.
- Pipe stacks shall not be higher than the manufacturer's recommendation. The maximum height of any pipe stack shall not exceed 1,2m.

PH 5 Pipe bending/deflection

The radius of curvature to the centreline of the pipe shall not be less than 20 times the outside diameter of the pipe at the ambient temperature of 20 degrees C. When lower temperatures are encountered the minimum bending radius shall be progressively increased by a factor of up to 2.5 times at 0 degrees C.

PH 6 Butt-weld jointing of HDPE pipes**PH 6.1 General**

The equipment to be used for butt-welding of the pipes shall comply with the relevant ISO standards for Heated Tool Welding and specifically to the requirements below.

The machine and equipment to be used shall be as manufactured by an approved and certified heated tool butt-welding machine manufacturer, suitable for butt-welding 450mm dia HDPE pipes in the field.

PH 6.2 Machine Requirements

The machine shall be either manually or semi-automatically operated, self-propelled or moved by other means and shall have a frame containing clamps which are sufficiently robust to re-round and accurately align the pipe ends to be jointed and shall have a minimum of two rams mounted on the pipe centreline axis. The rams shall move freely and control the movement of any sliding clamps.

The machine shall be capable of accommodating a stub end device for welding end fittings.

The machine shall be capable of ensuring that the five stages in the welding process, namely:

- bead-forming (at the correct pressure and temperature for the relevant pipe wall thickness);
- heating or soaking (at the correct pressure, temperature and over the correct time period (in seconds at approximately 10 times the pipe wall thickness in millimetres));
- change-over or conversion (over the correct maximum time period);
- joining (at the correct pressure build-up over the correct time period);
- cooling (at the correct pressure over the correct time period)

are all carried out to ensure a strong, water-tight joint to specification and to standard capable of withstanding the hydraulic test pressure and normal operating pressure of the pipeline.

PH 6.3 Hydraulic/pneumatic unit

The hydraulic/pneumatic unit shall be capable of actuating the clamp unit to provide adequate force and speed of operation. A monitoring device shall be attached to the machine to monitor ram pressure.

A data plate shall be permanently attached to the hydraulic/pneumatic unit setting out jointing and cooling pressures and times for relevant sizes of pipe. The jointing pressure shall be calculated based on a low weld interfacial pressure of 0.15MPa or on a high weld interfacial pressure of 0,52MPa and the cooling pressures shall be based on similar interfacial pressures.

PH 6.4 Trimming Tool

The trimming tool shall be capable of being mounted securely within the frame of the jointing machine to prevent

twist during machining in order to produce accurately matched planed pipe-end faces.

The trimming tool shall be fitted with suitable safety devices to prevent their operating outside the butt welding machine.

The blades of the trimming tool shall be sharp and have defect-free cutting edges to provide continuous shavings of uniform thickness.

The blades of the trimming tool shall be easily removable for re-sharpening or replacement.

PH 6.5 Heating Plate

The heating plate shall be electrically heated and shall be provided with a suitable temperature controller to give a uniform operating surface temperature of 200°C to 230°C.

The surfaces of the heating plate shall have adequate release properties and shall clearly show the presence of any contaminants and shall not require additional spray-on release agents.

After heating of the pipe ends, the machine must have the facility to rotate the heating plate away from the pipe ends without touching their melted surfaces and thereby damaging them.

The heating plate shall be fitted with a temperature probe or indicator accurate to within 1°C in the temperature range of 200°C to 230°C.

In addition to the above, a digital (laser) thermometer must also be provided to verify uniform heating and temperature across the heating plate for each weld, where recordings are taken in at least 3 points at 120 degrees to each other around the plate.

Preference will be given to welding machinery and equipment which have data loggers and data logging facilities to electronically log and record as many aspects as possible of every weld.

PH 6.6 Welder Training and Qualifications

All Welders shall be certified and shall be trained and have appropriate experience in the required welding process for this contract, namely the Butt-Welding (HS) Welding Process;

All welders shall be trained or shall have been trained only on nationally (or internationally) recognized thermal welder training courses in compliance with the MERSETA Education and Training Quality Assurance, such as those provided by the Plastics Federation of South Africa (PFSA) or as approved by SAPPMA or other approved and accepted training institutions and programmes.

On successful completion of the training course the Welder shall be tested in accordance with the relevant SANS/ISO standards for the Testing and Approval of Welders;

On successful completion of the competence test, the Welder must be issued with a certificate from the training institution indicating the welding process and welding machine(s) he was trained on and tested competent in. Welders who do not achieve a minimum of 70% in the theoretical exam may only weld under the supervision of a fully qualified welder.

Prior to any welding being done, all welders must submit a currently valid welding certificate acquired only under the above circumstances for submission to the Employers Agent for verification by him of the authenticity of the welder, the training institution, the training process, the welding machine(s) he was trained on and the authenticity of the training/competency certificate.

PH 6.7 Welding Process

The process of butt-welding the HDPE pipes shall be carried out in accordance with SABS 0268-1: Code of Practice: Welding of Thermoplastics-Welding processes. Part 1: Heated-tool welding or ISO 21307.

The following shall be borne in mind during the welding process:

- Welding shall not take place when the ambient temperature is lower than 5 degrees;
- A welding tent shall be used during the welding process to ensure that the welding equipment stays dry and dust free and the pipe ends being welded remain cool;
- The opposite ends of the pipes or pipe lengths being welded should be covered to reduce premature cooling of the heating plate by internal draughts;
- Pipes of different SDR, size and material type shall not be butt-welded;
- pipe ends or surfaces must not be touched by bare hands after planing/trimming as this can cause contamination of the surfaces. They must be wiped clean with a lint-free cloth or paper together with a suitable cleaning solvent as specified;
- the joined pipes shall not be removed from the welding machine before the specified cooling period has elapsed;
- untrained and/or uncertified personnel shall not be permitted to use the welding equipment;
- non-approved or sub-standard welding machinery and equipment shall not be used;
- the electricity supply generator shall be of sufficient size and capacity for the welding process.

A Welding Procedure Specification sheet, the format and content of which shall be approved by the Employers Agent prior to any welding taking place, shall be completed in detail and signed by the welder for every butt-weld carried out.

A computer generated weld report based on electronic data logging of as many aspects of the weld as possible, is preferred.

PH 6.8 Power Supply

The generator supplying electrical power to the field welding machine must be a 380 volt, 3 phase, 50 Hz generator producing at least 12,4 kW which must be electronically monitored and controlled.

PH 6.9 Segmented Bends

45 Degree and 90 degree HDPE bends to be welded segmented bends with the cut or mitre angle to be less than or equal to 7,5 degrees. The bend radius for both bends must be a minimum of three times the pipe diameter. Sufficient straight lengths of pipe at each end of the segmented bend must be provided to effect proper jointing. Segmented bends shall only be manufactured by an ISO 9002 registered quality assurance manufacturing company.

PH 7 Jointing

HDPE pipes are of the same size, class (PN rating) and material type, joints are to be made by heated tool butt-welding.

Where HDPE pipes are not of the same size, PN rating and material type or where they are to be connected to GMS flanged fittings, joints are to be made by HDPE stub flanges.

After pipe jointing, the pipe barrels shall be backfilled and compacted but all joints shall be left exposed for hydraulic pressure testing and may only be backfilled and compacted on the successful testing of the line and joint.

All buried flanged joints, inclusive of GMS flange, nuts, bolts and washers shall be enclosed with Denso mastic to a smooth finish, wrapped with a double layer of Denso tape and then wrapped with a polythene sheet strapped in place.

PH 8 Repairs/maintenance

Electrofusion jointing equipment to be supplied under this contract must consist of the following:

- A 220 volt generator of 10 kVA output which is electronically monitored and controlled;
- A Durafuse, or similar approved, Electrofusion Control unit (ECU) suitable for welding up to 500mm ND fittings;
- A Stihl 16 inch chain chainsaw, or similar approved chainsaw, for pipe cutting;
- A pipe scraping/preparation tool capable of removing 0.2 to 0.4mm from the outer surface of the pipe;
- A set of re-rounding clamps;
- A 15m long 15amp HD electrical extension cable;
- 30 x Electrofusion couplings to suit 400 mm dia HDPE pipes;
- 10 x Electrofusion couplings to suit 500 mm dia HDPE pipes;
- Ancillary equipment such as a marker pen, clean cloth or paper towels and propane alcohol cleaner;
- Operator training.

PH 9 Gaskets and Flanges

Where ordered, gaskets to be Klinger ring (not full-face) gaskets or similar approved.

Gaskets are not required at HDPE stub-to-stub joints and HDPE stub to GMS flange joints.

The thickness, drilling and PCD of the GMS flange must be compatible with that of the GMS backing ring to the HDPE stub, as per manufacturer's specifications.

PH 10 Pipe laying orientation

Unless directed otherwise, all HDPE pipes to be laid in the trench such that their pipe markings face upwards for ease of pipe size and PN rating identification when/if uncovered later for the purposes of inspection, maintenance or repairs during the operational life of the pipes.

PH 11 Pipe tolerances and defects/damagePipe Tolerances:

The maximum allowable depth of cut, scrape or gouge is 10% of the pipe wall thickness.

Any defects in excess of the maximum allowable and any deviations from the tolerances listed below shall be recorded on the report card for each pipe, together with the pipe number, pipe size, PN rating and batch number.

A photographic record may also be made where applicable.

If there are no excessive defects or no tolerance deviations, this must be shown as nil on the report card.

All report cards shall be submitted to the Employers Agent for instructions to be given by him on actions to be taken by the Contractor on pipes that do not comply, prior to any handling and loading of the pipes.

These actions may involve cutting off the damaged end of the pipe or cutting out the damaged section of the pipe or repairing the damaged areas or rejection of the damaged pipe, all as instructed.

This inspection and approval or rejection of each pipe shall be carried out prior to the Contractor handling, loading and transporting any pipes from the stacking area to the work sites for jointing and installation.

PH 12 Pipe and Joint Testing

Destructive Testing: Destructive tensile tests (and bending tests if ordered) shall either be carried out off site by SAPPMA, or any other approved testing authority, on random butt-welded joint samples, selected by the Employers Agent, and cut out of the pipeline on site, or preferably shall be carried out on site via an approved in-field tensile testing process.

At least four tensile tests shall be carried out and recorded per butt-weld joint sample and shall be tested in accordance with the relevant SANS/ISO standards.

Hydraulic Pressure Testing: Unless otherwise directed, the following steps shall be followed for hydraulic pressure testing of HDPE pipeline sections:

- Pressure testing may only be carried out when the pipe surface temperature is below 30 degrees centigrade;

- close the test section at both ends, fill the pipeline with water and provide facilities to allow all trapped air to be evacuated from the test section;
 - connect the pressure testing equipment and increase the pressure to 1,25 times the class of pipe being tested (PN x 1,25) in the following stages:
 - initially increase pressure to 50% of test pressure (PN x 0,625), allow to stand for 10 minutes for pipe to expand and stabilise, check for any major drop in pressure and/or visible leaks;
 - increase to 75% of test pressure, allow to stand for 5 minutes to allow for further pipe expansion, check for any major drop in pressure and/or visible leaks;
 - increase to the PN rating of the pipe, allow to stand for 5 minutes to allow for further pipe expansion, check for any major drop in pressure and/or visible leaks;
 - increase to the full test pressure of PN x 1,25;
 - once the test pressure is reached the pump must continue to maintain the test pressure for 10 minutes, during which time the pipe test section and fittings must be checked for visible leaks;
 - after 10 minutes the pump must be stopped and the test section observed for 60 minutes. The pipeline will deform visco-elastically and the pressure must not decrease by more than 30% in 60 minutes;
 - if the pressure decreases by more than 30% in 60 minutes then the test section must be inspected for any leaks at all butt-welded or flanged joints or connections and these leaks must be repaired and the pipe re-test.
- The pipe's surface temperature must also be checked to ensure it remains below 30 degrees and the test pressure gauges must be checked for correct operation;
- if the pressure decreases by less than 30% in 60 minutes then the test pressure is reduced to the class of pipeline being tested (PN rating) and maintained at this pressure for 30 minutes during contraction of the pipe;
 - if the pressure remains constant or increases (due to contraction) during this 30 minute period, then the test is acceptable.

PH 13 Co-efficient of Expansion

The co-efficient of expansion of HDPE is 0.2 mm per metre per °C. This is 17 times that of steel, 10 times that of copper and 2.5 times that of PVC.

Special attention must therefore be given to the process of delivering the pipes to the trench side and either butt-welding them in lengths then lowering into the trench or butt-welding them in the trench.

As soon as practicable after the pipes have been laid and jointed in the trench, the pipe barrels must be backfilled to minimize the effects of expansion and contraction of the pipe length, with the joints being left open for inspections during pressure testing.

Special attention must therefore also be given to the incorporation of air valve, isolating valve and scour valve assemblies into the pipeline at the required points along the pipe route, including the positioning and fixing of these assemblies in the valve chambers.

PH 14 Method Statement

A detailed Method Statement on all aspects of HDPE pipe handling, jointing, laying, testing, equipment etc must be submitted to the Employers Agent.

PJ MILD STEEL PIPES AND FITTINGS

PJ 1 FABRICATION

- (a) All materials to be SABS approved.
- (b) All fabricated steel pipe work to be manufactured using ASTM A106 (Standard Schedule 40) Seamless Pipes in conjunction with ASTM A234 Grade WPB butt weld fittings to ANSI B16.9 and BS1640 and welded in accordance with SANS 15614-1: 2007 and/or ISO 15614-1: 2004.
- (c) The supply and installation of all steel pipe work to be in accordance with SANS 1200L
- (d) All steel pipe to have a minimum wall thickness of 4.5 mm
- (e) All steel pipe work and fittings for welded assemblies/specials to be sand blasted Internally and externally prior to - and after - being welded together (refer to PK 3 Galvanizing section, item (a)).
- (f) All gaskets to be full-faced "Klinger" or similar approved.
- (g) Allowances have been made in pipe and fitting assembly lengths for 3 mm spaces between flange faces for gaskets and 10 mm spaces between the pipe end and flange face for flange adaptors.
- (h) All pipe work and fittings dimensions to be checked before being manufactured, any discrepancies to be reported to the Engineer.
- (i) All pipework, including puddle flanges, passing through brickwork or concrete walls or buried underground to be "Denso" wrapped, unless otherwise directed in writing.
- (j) All flanged shall be rated and drilled to SANS (SABS) 1123:2011, Table 1000/3 or 16000/3 or 2500/3 as applicable, unless otherwise stated.

PJ 2 WELDING

The specification and qualification of welding procedures for metallic materials, including welding procedure tests, to be in accordance with **SANS 15614-1: 2007** and/or **ISO 15614-1: 2004**.

Apart from reference to the above, the following documentation is required prior to the evaluation of an offer to tender or prior to any welding taking place:

- (a) A preliminary welding procedure specification.
- (b) The qualification or appropriate range of qualifications of the welder (AP1104) or welding operator who undertakes the welding procedure.
- (c) Documentation relating to the above, including a copy of a current certificate of competence and photograph of the welder or welding operator.

After the award of the tender, but prior to installing the initial batch of pipe work, the following must be presented to the Engineer for approval:

- (a) A signed and numbered radiographic report and visual copy of the x-rays of at least two butt welds carried out on the initial pipe work. (Items to be numbered)
- (b) All remaining welds to be supported by documentation relating to a solvent dye penetration test of each weld. (Both document and item to be numbered accordingly).

NB: The Engineer reserves the right to call for further radiographic procedures if deemed necessary.
All further batches of pipe work must be accompanied by written proof of dye penetration tests of all welds.

PJ 3 GALVANISING

- (a) All welded assemblies to be sand blasted internally and externally prior to hot dip galvanizing. NB: This is in addition to the sandblasting of steel work and fittings prior to the welding procedure (refer to PK 1 Fabrication section, item (d)).
- (b) All welds to be inspected and approved by the Engineer/Supervisor prior to hot dip galvanizing, unless otherwise directed in writing.
- (c) All pipe work and fittings including bolts, nuts and washers to be hot dip galvanized to **SANS 121:2000 or ISO 1461:1999**
- (d) All nuts to be oversized to allow for hot dip galvanizing.
- (e) All damaged hot dip galvanized surfaces, or all ends of pipes cut to suit on site, to be treated with "Zinc fix" or similar approved epoxy repair coating, to manufacturer's specification.

NB: Documentation relating to the above must accompany each batch of galvanized pipe work and fittings delivered to site (each item to be listed).

It is also a recommendation that the galvanizer should be a member of the Hot Dip Galvanizers Association of Southern Africa. This allows the contractors some recourse in the case of delays or rejection of items.

THE CONTRACT

PART C4: SITE INFORMATION

C.4.1 SITE INFORMATION**C4.1.1 Description of the Site and Access**

The uMkhanyakude District Municipality is located along the coast in the far north of the KwaZulu-Natal Province. The district shares international borders with two countries: Mozambique in the north and Swaziland along its north-western boundary. The N2 is a major transport route that runs from south to north through the UKDM, and is the only national road in the region. The R618 is the main road from the N2 to Hlabisa, and the R22 cuts through the coastal plain from Hluhluwe and Kwangwanase. . The project area itself is located within uMhlabuyalingana Local Municipality. Access to various parts of the project is via gravel roads and sand tracks off route R22 which runs between Manguzi or Kwangwanase town in the south and the South Africa / Mozambique border post of Farazela in the north.

C4.1.3 Security of Contractor's Site Establishment

The provision of security for the Contractor's site establishment and staff accommodation shall be the Contractor's responsibility, and no claims for additional security measures taken during the currency of the Contract will be considered other than as provided for in the Conditions of Contract.

C4.1.4 Liaison

The Contractor shall ensure minimal disruptions to the local community during the duration of the Contract.

C4.1.5 Health and Safety**General**

The work to be performed under this Contract is considered as "Construction Work" as defined in the New Construction Regulations, 2003 of the Occupational Health and Safety Act, 1993. Health and safety on site will therefore be subject to terms and regulations contained in that Act and the relevant Regulations in conjunction with the Employer's own Health & Safety Requirements as referred to in this document.

In terms of the Construction Regulations 2014, hereinafter referred to as the Regulations, the Contractor appointed for this Contract shall be considered the Principal Contractor and as such, shall attend to the following main issues, amongst others, as required under the Regulations:

- He shall provide and demonstrate to the Employer a suitably documented Health and Safety Plan based on the Health and Safety Specification of this document.
- He shall prepare Health and Safety Specifications for work he subcontracts under this contract.
- He shall require from his Subcontractors to provide and demonstrate to him suitably documented Health and Safety Plans based on his Health and Safety Specifications.
- He shall discuss and negotiate the contents of each of his Subcontractors' Health and Safety Plans with his each of his Subcontractors and train his Subcontractors where necessary and approve each Subcontractor's Health and Safety Plan.
- He shall ensure that each Subcontractor's Health and Safety Plan is implemented and maintained and shall stop any Subcontractor from executing work not in accordance with the Principal Contractor's or with the Subcontractor's Health and Safety Plan.
- He shall ensure that his and each of his Subcontractors' Health and Safety Plans are available on the site.
- The Contractor is to employ a Health and Safety officer is required to be on site for the duration of the contract.

C4.2 Drawing Register

Drawing Number	Title	Description	Revision A
3233-7B-000	Drawing Schedule	-	Apr-23
Locality Plan			
3233-7B-001	Zone 7B Locality Plan	Sheet 1 of 1	Apr-23
Layout Plan			
3233-7B-100	Zone 7B Overall Layout Plan	Sheet 1 of 1	Apr-23
Reticulation Layouts			
3233-7B-101	Zone 7B Compilation Layout	Sheet 1 of 1	Apr-23
3233-7B-102	Zone 7B Reticulation	Sheet 1 of 6	Apr-23
3233-7B-103	Zone 7B Reticulation	Sheet 2 of 6	Apr-23
3233-7B-104	Zone 7B Reticulation	Sheet 3 of 6	Apr-23
3233-7B-105	Zone 7B Reticulation	Sheet 4 of 6	Apr-23
3233-7B-106	Zone 7B Reticulation	Sheet 5 of 6	Apr-23
3233-7B-107	Zone 7B Reticulation	Sheet 6 of 6	Apr-23
Elevated Tank			
3233-7B-300	Manguzi WTW Site Layout Plan	Sheet 1 of 1	Apr - 23
3233-7B-301	Inlet Chamber Details	Sheet 1 of 1	Apr - 23
3233-7B-302	Chamber reinforcing details	Sheet 1 of 1	Apr - 23
3233-7B-303	Outlet chamber details	Sheet 1 of 1	Apr - 23
3233-7B-304	Elevated Tank Foundation Details	Sheet 1 of 1	Apr - 23
3233-7B-305	Tank Overflow and Scour Details	Sheet 1 of 1	Apr - 23
Point Sketches			
3233-7B-500	Point Sketches	Sheet 1 of 1	Apr-23
Standard Details			
3233-7B-900	Air Valve Details	Typical Details	Apr-23
3233-7B-901	Isolating Valve Details - 50mm to 90mm Diameter	Typical Details	Apr-23
3233-7B-902	Scour Valve Details	Typical Details	Apr-23
3233-7B-903	Pipe Marker and Thrust Block Details	Typical Details	Apr-23
3233-7B-904	Setting out Details	Typical Details	Apr-23
3233-7B-905	Road Crossing Details	Typical Details	Apr-23
3233-7B-906	River and erosion gulley crossing details	Typical Details	Apr-23
3233-7B-907	Sign board details	Typical Details	Apr-23
3233-7B-908	Traffic accommodation details	Typical Details	Apr-23
3233-7B-909	Hydrant Details	Typical Details	Apr-23
3233-7B-910	Ventilator Details	Typical Details	Apr-23
3233-7B-911	Typical Erf Connection	Typical Details	Apr-23
3233-7A-912	Isolating Valve Details - 110mm to 250mm Diameter	Typical Details	Apr-23

THE CONTRACT

PART C5: ANNEXURES

ANNEXURE A:
MONTHLY LABOUR ENGAGEMENT REGISTER

[illegible]

ANNEXURE B:
MONTHLY LABOUR RETURN

MONTHLY LABOUR RETURN

This completed form shall accompany each Progress Claim to the Client

DATE:

Project Name:			
Project No.			
Contractor			Author's Name
Consultants			Checked by Consultant

Signed

Employment

Occupational Category	Totals		Adult				Youth (under 35 years of age)				Disabled			
			Women		Men		Female		Men		Female		Men	
	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days
Clerical														
Labourer														
Security														
Semi Skilled														
Skilled														
Supervisor														
TOTAL														

Training Activities**Non - Accredited Training**

Training Type	Totals		Adult				Youth (under 35 years of age)				Disabled			
			Women		Men		Female		Men		Female		Men	
	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days
Administration														
Technical														
Lifeskills/ISD														
Literacy & Numeracy														
Voactional														
Business Skills														
Environmental Awareness														
Total Training														

Accredited Training

Training Type	Totals		Adult				Youth (under 35 years of age)				Disabled			
			Women		Men		Female		Men		Female		Men	
	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days	Persons	Person Days
Administration														
Technical														
Lifeskills/ISD														
Literacy & Numeracy														
Voactional														
Business Skills														
Total Training														

Definitions

Male & Women Over the age of 35 years

Youths, Male & Women Under 35 years of age

For Example

Persons Days The number of days 1 person works

2 women work for 5,5 days in a month

2 x 5,5 = 11 person days

ANNEXURE C:
MINIMUM WAGE RATES, PER TASK:

The Local labour rate for the duration of the project is R 25.42 per hour in accordance with the Department of Labour's minimum wage rate. All local labour rates are to be in accordance with Department of Labour's minimum wage rate detailed in Government Gazette No. 11546 dated 21 February 2023.

ANNEXURE D:
HEALTH AND SAFETY SPECIFICATIONS

SPECIFICATION FOR OCCUPATIONAL HEALTH AND SAFETY

FOR:
MANGUZI STAR OF THE SEA ZONE 7B

Prepared for:
uMkhanyakude District Municipality



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ORIGINAL DATE: 14 APRIL 2023

DATE: 14 APRIL 2023

Safety Connection REFERENCE NUMBER: 0376

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DOCUMENT CONTROL SHEET

CLIENT:	uMkhanyakude District Municipality
PROJECT NAME:	Manguzi Star of the Sea Zone 7B
CONTRACT NUMBER	TBC
TITLE OF DOCUMENT:	Specification of Occupational Health and Safety for the construction of Manguzi Star of the Sea Zone 7B
SC REFERENCE:	0376

DOCUMENT HISTORY

REVISION	DATE	COMPILED BY	REVIEWED BY	COMMENTS
00	14/04/2023	R.W Atkinson	N.W Atkinson	Original Specification

APPROVAL FOR RELEASE

NAME	TITLE	SIGNED
R.W Atkinson	Pr. CHSA Agent	
N.W Atkinson	CHSM	

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1. Purpose

This document describes the requirements of compliance to which the Principal Contractor/Contractor is to adhere in relation to the scope of works.

This document defines the minimum management requirement that is to be implemented by the Principal Contractor/Contractor/Service Providers for the management of Health and Safety on this uMkhanyakude District Municipality project.

The aim of this document is to present the health and safety aspects that need to be controlled and managed on the project.

This Site-Specific Health and Safety Specification identifies and encompasses the working behaviours and safe work practices that are expected of all Employees, Vendors and Contractors, Sub-Contractors, Service Providers and Visitors, engaged on the Manguzi Star of the Sea Zone 7B site.

Providing a guideline to comply with best Health & Safety practices and the Occupational Health and Safety Act 85/1993 as amended, including reference to applicable legislative requirement.

2. Scope

Contractors and Service Providers are required to read and take note of the requirements within this specification and ensure that they provide the required budget for stipulated safety requirements.

This specification applies to the Manguzi Star of the Sea Zone 7B construction site which entails:

- 8km of HDPE reticulation network with pipeline diameters ranging from 32mm to 110mm (some portions of pipeline will be installed using the method of Horizontal Directional Drilling due to numerous existing services)
- Valve chambers.
- Metered ERF connections.
- Road crossings including horizontal directional drilling.
- 800 KI elevated tank at the Manguzi Water Treatment works with associated pipework.

This Site-Specific Health and Safety Specification defines the strategies to manage Health & Safety.

3. Definitions

The following definitions will apply to the Safety Management Plan, acronyms given hereunder shall apply:

3.1 Construction Work (as defined by the Occupational Health and Safety Act: Construction Regulations 2014):

Means any work in connection with –

- a) the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- (b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the



moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work.

3.2 Hazard Identification and Risk Assessment and Risk Control (HIRA)

Means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

3.3 "Construction Site"

Means a workplace where construction work is being performed.

3.4 The Act

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 85 of 1993 and Construction Regulations 2014 promulgated there under, (OHSA).

3.5 Hazard

Means a source of or exposure to danger (source which may cause injury or damage to persons or property).

3.6 Risk

Means the probability or likelihood that a hazard can result in injury or damage.

3.7 Management and Supervision of Construction Works

3.7.1 "Construction Manager"

Means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site. The Construction Manager Shall be registered with the SACPCMP as a Construction Manager and shall be full time on site.

3.7.2 "Construction Supervisor"

Means a competent person responsible for supervising construction activities on a construction site.

3.8 Hazardous Chemical Substance (HCS)

Means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

3.9 Construction Plant

Encompasses all types of plant including but not limiting to, cranes, piling frames, boring machines, excavators, dewatering equipment and road vehicles with or without lifting equipment.

3.10 Contractor

Means an employer who performs construction work.

3.11 Health and Safety Program

Means the documented program which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

Health and Safety Plan (HSP)

Means a site, activity or project specific documented plan in accordance with uMkhanyakude District Municipality's health and safety specification.

3.13 Health and Safety File

Means a file, or other record containing the information in writing required by Construction Regulations 2014.

3.14 Agent



Means in terms of Construction Regulations, 2014, 'a competent person who acts as a representative for uMkhanyakude District Municipality and in this instance will generally include an officer representing uMkhanyakude District Municipality who has been assigned a safety portfolio.

3.15 Client

Means uMkhanyakude District Municipality for whom construction work is being performed on their behalf.

3.16 Competent Person

Means any person having the knowledge, training, experience and where applicable, qualifications specific to the work or task being performed:

- a) Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No. 67 of 2000), those qualifications and training shall be regarded as the required qualifications and training; and
- b) Is familiar with the Act and with the applicable Regulations made under the Act.

3.17 Demolition Work

Means a method to dismantle, wreck, break, pull down or knock down of structure or part thereof by way of manual labour, machinery, or the use of explosives.

3.18 "Construction Supervisor"

Means a competent person responsible for supervising construction activities on a construction site.

3.19 "Construction Work Permit"

Means a document issued in terms of Regulation 3.

3.20 "Fall Prevention Equipment"

Means equipment used to prevent persons, tools or machinery from falling from a "fall risk" position, including personal protective equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment.

3.20.1 "Fall Risk" means any potential exposure to falling either from, off or into.

3.20.2 "Fall protection Plan" means a documented plan which includes:

- a) all risks relating from a fall risk position, considering the nature of work undertaken.
- b) the procedures and methods to be applied in order to eliminate the risk; and
- c) a rescue plan and procedures.

4. References

1. SHE Guideline 5-43-1 Rules for Contractors on Site
2. Compensation for Occupational Injury and Diseases Act, 130 of 1993
3. Explosives Act, 15 of 2003.
4. Occupational Health and Safety Act, 85 of 1993
5. Asbestos Abatement Regulations, 2020.
6. Construction Regulations, 2014 [GN R.84 07/02/2014]
7. Driven Machinery Regulations, 1988 [GN R.295 1988]
8. Electrical Installation Regulations, 2009 [GN R.242 2009]
9. Electrical Machinery Regulations, 1988 [GN R.1593 1988]
10. Environmental Regulations for Workplaces, 1987 [GN R.2281 1987]
11. Explosives Regulations, 2003 [GN R.109 2003]
12. Facilities Regulations, 2004 [GN R.924 2004]
13. General Administration Regulations, 2003 [GN R.929 2003]
14. General Machinery Regulations, 1988 [GN R.1521 1998]
15. General Safety Regulations, 1986 [GN R.1031 1986]
16. Hazardous Biological Agents Regulations, 2022 [GN R.1887 2022]



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17. Hazardous Chemical Substances Regulations, 1995 [GN R.1179 1995]
18. Lead Regulations, 2002 [GN R.236 2002]
19. Lift, Escalator and Passenger Conveyor Regulations, 1994 [GN R.797 1994]
20. Major Hazard Installation Regulations, 2001 [GN R.692 2001]
21. Noise Induced Hearing Loss Regulations, 2003 [GN R.307 2003]
22. Pressure Equipment Regulations, 2009 [GN R.734 of 15 July 2009]
23. Disaster Management Act, Act 57 of 2002 and associated regulations.
24. Schedule: Consolidated Directions on Health and Safety Measures in certain workplaces 28/09/2020 Regulation 4 (10) of the National Disaster Act (GG R480 no 43258)

5. Requirements

5.1 Leadership and Commitment

The Contractor acknowledges uMkhanyakude District Municipality's strong commitment to Health and Safety and the Contractor affirms that it has a written Health and Safety Policy, supporting uMkhanyakude District Municipality's Health and Safety management policy that has been signed, and is actively supported and endorsed by the Contractor's management.

The Contractor represents that its written policy is widely disseminated and understood among its employees, and that its policy includes a description of the Contractor's organization, procedures and methods of communication to and from personnel. The Contractor shall provide copies of its policy and policy statement to uMkhanyakude District Municipality upon request.

5.1.1 Legal Requirements and Regulations for Health and Safety

The contractor warrants that he is familiar with the contents and implications of the applicable Legislation (latest reprints), codes of practice, guidelines, and standards applicable to the services to be provided.

The Act and the Regulation, where applicable, require development and implementation of Work Method Statements for a range of high-risk construction activities and prescribed demolition activities, which, where applicable, the contractor shall develop and implement.

The contractor shall ensure that its personnel and its subcontractor's personnel have been informed of all such laws, Acts, regulations, codes of practice, guidelines, and standards.

Conspicuously display the Department of Labour Construction Permit Number at the entrance to the site (i.e., on the main gate to the site office area and to the main entrance onto the construction area). Where the site is spread over a long distance (e.g., on road works, etc) then display the permit number at the main entrance to the site camp area. If the sign fades over time, the sign shall be replaced to ensure that it is always legible, at the contractor own cost.

The contractor shall provide a budget for health and safety and will be required to detail this in the form of a Bill of Quantities (BOQ) that shall be signed by the appointed Construction Health and Safety Officer CR8(5) and the appointed Construction Manager CR8(1). The template provided shall be used, see Annexure 9.

Note: Annexure 9 shall be amended by the appointed Construction Health and Safety Officer CR8(5) with the input from the appointed Construction Manager CR8(1) to ensure it covers all aspects relating to this contract. The Health and Safety BOQ shall be amended and expanded by the Contractor to cover all items they require to comply with this Site-Specific Health and Safety Specification and their Legal obligations.

5.1.2 Contractors' General Requirements for Health and Safety

The Contractor is solely responsible for carrying out the work under the Contract having the highest regard for the health and safety of its employees, uMkhanyakude District Municipality's employees, and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the Contractor carrying out its obligations under this Contract.

The Contractor shall initiate and maintain safety precautions and programs to conform to all applicable Health and Safety laws or other requirements, including requirements of any applicable government instrumentality and uMkhanyakude District Municipality corporate,



business unit and site requirements. The Contractor shall, at its own cost, erect and maintain safeguards for the protection of workers and the public. The Contractor shall manage all foreseeable hazards created by performance of the work. The Contractor shall:

- Provide all things and take all measures necessary for maintaining proper personal hygiene, ensuring safety of persons, property and protecting the environment at or near the Site.
- Avoid unnecessary interference with the passage of people and property at or near the Site.
- Prevent nuisance and excessive noises and unreasonable disturbances in performing the Services.
- Be responsible for the adequacy, stability, and safety of all of its site operations, of all its methods of design, construction and work and be responsible for all of the work, irrespective of any acceptance, recommendation or consent by uMkhanyakude District Municipality, its Contractors, employees, agents and invitees, or any Government Body
- Costs for the above are borne by the Contractor.
- The Contractor shall comply and is responsible for ensuring that all its Sub-contractors comply with the relevant legislation(s) and statutory regulations for health and safety, uMkhanyakude District Municipality's Health & Safety requirements included in the Contract and other document pertaining to health & safety contained in the Program Health & Safety Management System and include standards, policies, procedures, guidelines and safe work instructions.

5.1.3 Contractor's Health and Safety Management Plan

The Contractor shall prepare, implement, and administer the Contractor's Health and Safety Management Plan. The Plan is in writing and forwarded prior to mobilisation to the construction site for work under the Contract, to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Agent for review. The Health and Safety Management Plan shall comply with this Contract including Project Site Rules & Requirements, and applicable law relating to workplace health, safety, and environmental standards. Any proposed amendments or revisions to the Contractor's Safety Management Plan is submitted to uMkhanyakude District Municipality for acceptance.

The Health and Safety Management Plan shall provide a systematic method of managing hazards according to the risk priority and shall include all mobilisation and site set-up activities.

The Plan will be audited for completeness by uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated representative using an audit tool, and a score of 80% will be required before it will be "accepted with comments".

The Plan is presented and at least "accepted with comments" by uMkhanyakude District Municipality BEFORE permission will be granted to the Contractor to mobilise to site.

The Contractor's Health and Safety Management Plan shall demonstrate management's commitment to safety and shall include, but not be limited to, the following minimum auditable elements:

5.1.3.1 Legal & Site-Specific Requirements

The Contractor shall develop, implement, and administer Health & Safety Plan. The plan shall be in writing and shall be submitted to uMkhanyakude District Municipality Agent within 7 days (See Annexure 8 which shall form the basis of the plan contents) of the contract being awarded no work may commence on site without the written permission of uMkhanyakude District Municipality included in the written permission shall be a copy of the construction Permit.



The Contractor shall provide all health and safety Construction Work Permit documents and sign the construction permit application within 7 calendar days of the contract being awarded.

The plan shall demonstrate management's commitment to safety and include, but not be limited to, the following minimum auditable elements:

- The Contractors' Safety Policy. (**OH&S Act - Section 7.**)
- How safety responsibilities are assigned to distinct roles within the organisation. Identification of role of Safety Coordinator, and on-site agent/managers. (**OH&S Act - Section 8, Construction Reg.8**)
- Selection, placement and training procedures, including induction and ongoing training in 'Basic Safe Work' and Occupational Health & Safety training for newly hired or promoted supervisors. (**OH&S Act - Section 8.**)
- Occupational Health & Safety communications and meetings, including daily safe task instructions and project safety meetings. (**OH&S Act - Section 19 & 20**)
- Assessment of sub-contractors and Service Providers, including requirements for Health & Safety Plans.
- Safety awareness promotions.
- Nomination of personnel to carry out safety inspections. The task may be shared with other duties and provided within the resources of individual gangs and may be rotated.
- Contractor senior management involvement with Company's staff in consultative processes & daily management Safety walkabouts.
- Occupational Health & Safety Workplace Environment, including provision for monitoring employee exposures to noise, dust, etc. (**OH&S Act – Environmental & Facilities Regulations**)
- Rules and regulations including safety procedures the Contractor has in place for recurring work activities
- Personal protective equipment rules. (**OH&S Act – General Safety Regulation 2**)
- Control of dangerous and hazardous substances. (**OH&S Act – Hazardous Substance Regulations**)
- System of hazard identification and risk control, such as Risk assessments, Daily Safe Task Instructions, and communication. (**OH&S Act – Section 8, Risk Assessment, Construction Reg.9**)
- Design control (if applicable) (**OH&S Act – Section 10**)
- Verification procedures including: (**OH&S Act - Section 8**)
- Monthly internal safety audits to ensure compliance with Health & Safety Plans
- Daily site safety inspections and audits. The auditing role may be shared with other duties or provided within the resources of individual groups. The role may be rotated.
- Inspection of plant, tools, and equipment prior to introduction to site and at least monthly thereafter
- Accident/incident reporting, recording, investigation, and analysis, which ensure that corrective action, are taken and this action is communicated to report initiators. (**OH&S Act – General Administrative Regulations 6**)
- Evacuation and emergency planning (**OH&S Act – Environmental Regulation 9**)
- Rehabilitation procedures that encourage an early return to work
- Record keeping, including details of what is kept and for how long



5.1.3.2 Hazard Identification, Risk Assessment and Risk Control

- The development of a project/work scope and activity risk profile identifying and considering, safety, health and environmental hazards and exposures, for example, rigging, working at height, welding, confined spaces, delivery Contractors, unloading materials and equipment from trucks, hazardous substances, etc
- How controls to manage risks identified within the risk profile will be formalised and implemented
- Personal Protection Equipment
- The hazard identification and risk assessment process for specific operations and activities and for new activities identified after the development of the project/work scope and activity risk profile. (Considers methodology, expert advice, and selection of participants)
- The process to be used to review the effectiveness of risk controls
- Workplace hazard inspections
- The implementation of a safety observation (behaviour audit) and coaching process conducted as a minimum by persons in leadership roles
- Method by which daily activities will be assessed for hazards and controls defined before work commences
- Contractor will carry out inspections and maintain requests of the identification of and implementation of inspection and maintenance controls for plant, mobile plant, equipment, and tools requiring formal management, including and not limited to:
 - o Mobile cranes
 - o Vehicles
 - o Scaffolding
 - o Hoists and winches
 - o Lifting gear
 - o PPE
 - o Ladders
 - o Pressure vessels
 - o Elevated work platforms
 - o Man hoists
 - o Explosive powered tools
 - o Portable electrical equipment
 - o Confined spaces.
 - o MSDS Register and Information
 - o Authorised Isolators and Lock holders
- Process for identifying, developing, and communicating site rules and standards.
- Control of dangerous and hazardous substances

5.1.3.3 Policies Mandated by uMkhanyakude District Municipality



uMkhanyakude District Municipality will require all Contractors on the project to comply with and/or achieve the objectives of the following:

- Health & Safety Policies and Standards
- Health & Safety Policies and procedures
- Safety Management System and procedures
- The Project Health and Safety Management Plan
- uMkhanyakude District Municipality's or uMkhanyakude District Municipality's nominated Representative's Safe Operating Procedures evolving from project risk assessments and included in the project Safety Management Plan and the Project Site Rules

5.1.3.4 Injury Management

- Processes to ensure employees are medically fit and suited to perform their functions safely
- An incident reporting and investigation structure including root cause establishment and corrective action taken
- Experienced / trained investigators on all projects
- A process to review the effectiveness of incident investigation action plans
- The conducting of first – aid needs and emergency response risk assessments
- A return-to-work program (restricted duties)
- A rehabilitation programs
- Trauma counselling
- Processes to ensure the appropriate authorities are notified in the event of a reportable incident

5.1.3.5 Health and Safety Communication and Consultative Processes

- How project leadership will ensure all personnel are kept regularly up to date with Health and Safety information and how prompt feedback will be given to personnel for issues they raise. For example, hazard reports
- The establishment and maintenance of a consultative process for the duration of the project
- Daily pre-start discussions that encourage staff and leaders to try to anticipate and pre-empt potential hazards within the day's activities along with "Toolbox" meetings and project safety meetings
- Implementation of improvement programs that encourage and recognise personnel suggestions to enhance Health and Safety on site
- Health and Safety publicity and awareness programs. For example, competitions and lifestyle improvement
- Attendance at site safety meetings by Project Manager, Safety Manager and Safety Representatives. (To be elected and appointed per work area and discipline and comply with the **Act Section 17 & 18.**)

5.1.3.6 Education, Training and Competency



- The Principal Contractor shall ensure that all certificates of competency supplied to the Client's Health and Safety Agent are verified/vetted by a reputable third party such as MIE (www.mie.co.za) for all key personnel on site such as.
 - Construction Managers (CR8(1) & CR8(2)),
 - Site Supervisors CR8(7) & CR8(8),
 - Construction Health and Safety Officers and Managers CR8(5),
 - Risk Assessor, Incident Investigators, Fall Protection Planners, Scaffolding Designations and First Aiders.
- Identification of the competencies required by employees along with selection, placement, and any training requirements.
- Identification and implementation of the process that will be used to ensure that employees hold the required competencies.
- The identification of minimum core and Health and Safety skills required by persons in leadership and supervisory roles.
- Identification, assessment, and management of hazards
- The development of a training and development plan that ensures personnel attains the desired skills and is also able to monitor refresher-training requirements.
- Mechanisms to review the effectiveness of training where appropriate.
- A site induction and orientation system that includes specific site issues and requirements and complements the General Induction
- Methodology for briefing personnel on new or changed standards, site rules and or procedures, particularly after absence from site.
- Compliance with uMkhanyakude District Municipality training and competency requirements

5.1.3.7 Measurement and Review

- Safety performance reviews with all site personnel by their supervisors at monthly intervals
- Schedule of site inspections and audits involving persons in leadership roles
- Leadership participation and review of significant incidents
- Schedule of reviews of the Health and Safety plan implementation progress
- Schedule of external safety audits of the project
- Scheduled reviews after the completion of potentially high-risk activities on site
- Provision for monitoring of employee's exposure to noise, dust etc
- Inspection and acceptance of plant, equipment, tools etc prior to introduction to site and regularly thereafter

5.1.3.8 Health and Safety Alignment Meetings

uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative will hold a Health and Safety alignment session with contractor who has been awarded the tender. The Tenderer's senior project and proposed site management personnel shall attend.



This session will be focused on the contents of the HSE specification in relation to the expectations of uMkhanyakude District Municipality and uMkhanyakude District Municipality's nominated Representative with regard to the Tenderer's Health and Safety leadership and project Health and Safety management proposals.

The aspects of the Contractor's tender that are unclear or sections of the Tender Document that have been missed or not fully understood and may need further explanation, will be discussed, and resolved.

At the end of the session, the Contractor will have a complete and unambiguous understanding of the requirements with respect to the management of Health and Safety during the project works and uMkhanyakude District Municipality will fully understand what the Contractor has included in his tender.

After award of the Contract and prior to work commencing, the Contractor shall participate in a Kick-Off Health and Safety review and alignment session with uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated representative. The purpose of this review and alignment session is:

- To compare the contents of the Contractor's Health and Safety Management Plan and the Project Health and Safety Management Plan.
- To facilitate a consistent approach to Health and Safety issues.
- To ensure specific Health and Safety risks are addressed prior to commencement.
- To align all parties on the program Health & Safety Goals, expectations, and requirements pertaining to Health & Safety.
- To arrange training to the Contractors Site Management team regarding Construction Safety Leadership.
- Provide information on uMkhanyakude District Municipality's specific Health & Safety Site Rules and Requirements.

The Contractors' Project Manager and Project Sponsor or equivalent, and Senior site representative, site leadership shall attend the above meetings, alignment, and training sessions. The meetings, alignment and training sessions will be conducted prior to the Contractor commencing activities on the Site, including mobilisation and site set-up activities.

The Contractor shall not commence any site activities until written acceptance (at least "accepted with comments") of the Contractor's Health and Safety Management Plan is obtained from uMkhanyakude District Municipality or uMkhanyakude District Municipality's Agent.

Contractors are responsible for qualifying all Sub-contractors using this system. Sub-Contractors approved for work will be forwarded to uMkhanyakude District Municipality review and comment. The contractor will keep this list up-to-date and will provide monthly updates to the status of Sub-Contractors engaged by the principal contractor.

5.1.4 Site Management

The Contractor shall comply with OH&S Act – Section 8, 9, 13 and 16 and the Construction Regulations 2014.

The Contractor shall nominate and appoint a responsible person on site to whom uMkhanyakude District Municipality may refer in connection with the Works. Persons are nominated for all shifts worked or whilst any activity relating to the Contract is being performed on site and shall have the authority to bind the Contractor with respect to the Contract. (OH&S Act - 16 Section (2)).

The Contractor shall ensure that the performance of all specified Works is managed and supervised throughout by a sufficient number of qualified and competent appointed representatives of the Contractor, who have experience in the type of work specified. (OH&S Act – Construction Reg. 8 (1) and 8 (2).)



The Construction Manager CR8(1) and Assistant Construction Manager CR8(2) shall be registered with SACPCMP and be in good standing. The Construction Manager CR8(1) and Assistant Construction Manager CR8(2) shall present proof of accredited training in HIRA, Occupational Health and Safety Act No. 85 of 1993, Construction Regulations 2014 and Legal Liability.

Note: No work shall commence and/or continue without either the Construction Manager CR8(1) or the Assistant Construction Manager CR8(2) present on site. Furthermore, the Construction Manager CR8(1) shall be on site full time, where the Construction Manager CR8(1) is required to leave site, if no alternative Construction Manager CR8(1) or CR8(2) is present on site then all work shall stop. The Assistant Construction Manager CR8(2) can only stand in for the Construction Manager CR8(1) for a period not exceeding three (3) calendar days.

The Construction Manager CR8(1) shall be equipped with a mobile telephone with message bank or an equivalent communication device so that communication throughout the Contract can always be maintained.

The Construction Manager CR8(1) shall provide a list of names and contact telephone numbers of all Contractors and Sub-Contractor's contact persons on site. This list shall be updated as new Contractors or Sub-Contractor employees commences on site.

The Construction Manager CR8(1) shall keep a record of all employees, including date of induction, relevant skills, and licenses, and be able to produce this list at the request of uMkhanyakude District Municipality site representative.

The Construction Manager CR8(1) shall complete and issue to uMkhanyakude District Municipality site representative staffing sheets describing the day's activities, labor numbers and classifications prior to 9.00 am on a daily basis.

uMkhanyakude District Municipality site representative is notified of any new starter with evidence of induction and site-specific induction prior to commencement of work.

5.1.5 Contractor's Construction Health & Safety Officer

The Construction Health & Safety Officer shall be appointed in terms of the Occupational Health and Safety Act and shall be on site when work commences and be present until all activities for the day (Including sub-Contractors) are finished. **NB:** No Construction Health and Safety Officer on site, in the correct ratio, means no work shall commence or continue.

Construction Health & Safety Officer shall be registered with the SACPCMP and be in good standing.

Construction Health & Safety Officers are appointed in the following ratio: 1 : 100 (Total number of people to include sub-Contractors).

Once (1) person on site and up to and including One Hundred (100) people – A Full time Construction Health & Safety Officer shall be required.

Full time Construction Health & Safety Officer is required for night shift(s) or weekend public holiday work.

More than One Hundred (100) people on site a full time Construction Health & Safety Officer for every 100 (e.g., 101 = 2 / 320 = 4 etc.)

Where two or more Construction Health & Safety Officers are appointed one of the Construction Health & Safety Officers shall be appointed as the Senior Safety Officer charged with health and safety management of the site.

The Contractors' Construction Health & Safety Officer is responsible to assist with legal compliance for his 16(2) Appointee and Construction Manager 8(1). He/she shall report functionally to uMkhanyakude District Municipality Agent for the project. He/she shall be equipped with a phone and a PC to ensure his duties and functions can be met.

The Construction Health and Safety Officer(s) shall have the following minimum qualifications:



- Shall be registered and in good standing with the SACPCMP as a Construction Health and Safety Officer (CHSO).
- At least 5 years' experience as a Construction Health & Safety Officers on Construction projects of a similar nature and 2 years working at heights experience.
- Shall have a minimum of a SAMTRAC (Or equivalent – approved by uMkhanyakude District Municipality Agent).
- Successful completion of a supervisors training course.
- Sound knowledge of the Occupational Health and Safety Act 85 of 1993 and Regulations including the 2014 Construction Regulations
- Qualification in hazard identification, risk assessment and risk management processes (HIRA).
- Sound knowledge of incident causation phenomena.
- Qualification in accident/incident investigation procedures (Such as IRCA's Route Cause Analysis (RCAT), etc).
- Sound knowledge of SANS 10085-1:2004. (Scaffolding).
- Valid First Aid Certificate level 1.
- Valid SAQA Accredited Fall Arrest Certificate US 229998 with IWH accreditation on the certificate.

Prior to work commencing, Contractors shall submit a CV of the proposed Construction Health & Safety Officer to uMkhanyakude District Municipality's Health and Safety Agent for review, possible interview and approval.

The Contractor shall notify uMkhanyakude District Municipality's Health and Safety Agent in writing of the name, qualifications, duties and responsibilities of the proposed Construction Health & Safety Officer. Approval shall be obtained from uMkhanyakude District Municipality's Health and Safety Agent, and the person shall be appointed and mobilised, prior to the Contractor mobilising to Site.

In the event that a Construction Health & Safety Officer disobeys direct Health & Safety Instructions, condones unsafe acts or conditions on site (either willingly or otherwise), from uMkhanyakude District Municipality's Health and Safety Agent can remove the offending person from the project at the Contractors Cost.

5.1.6 Fall Protection Planner

For all working at heights the contractor shall appoint a Fall Protection Planner.

The Fall Protection Planner shall have the following qualifications as a minimum:

- Fall Arrest Course (Accredited SAQA Unit Standard 229998)
- Fall Protection Planner (Accredited SAQA Unit Standard 229994)
- A designated member "Fall Protection Planner" in good standing with a professional body (such as the Institute for Working at Heights, IWH).
- Valid Medical Certificate of Fitness with Annexure 3.

The Fall Protection Planner shall determine what site-specific appointments are required e.g., Fall Protection Officer, Fall Arrest Worker, Fall Protection Equipment Controller, etc.

The Fall Protection Plan shall be drafted in accordance with the requirement of the Fall Protection Planner course (SAQA Unit Standard: 229994), considering any changes in the industry best practices, and will be assessed by uMkhanyakude District Municipality's

Health & Safety Agent. A copy of the “Fall Protection Plan Check Sheet –Rev0: (See Annexure 6) that will be used by uMkhanyakude District Municipality’s Health & Safety Agent to assess the contractors Fall Protection Plan is available on request, and the Contractors Fall Protection Plan shall be fully compliant with this “Fall Protection Plan Check Sheet - Rev0”.

5.1.7 Snake Handlers

The Contractor shall appoint a qualified and competent snake handler(s) on site who has been issued with snake handling equipment and containers to safely remove and relocate snakes from site to a safe area.

The Contractor shall ensure that there is always an appointed, qualified and competent snake handler on site (if there is no snake handler on site then work must stop).

The Appointed Snake Handler(s) shall hold a valid Snake Handling Certificate with the African Snakebite Institute or similar recognised institute (specific training on local fauna is required, i.e., international certificates must be able to prove that local snake awareness and handling training has been provided).

The appointed Snake Handler(s) shall also have:

- A valid First Aid Certificate (Level 1 as a minimum Level 2 preferable)
- Valid Driver's License.
- Access to a vehicle.

5.1.8 Contractors' Safety Manual

The Contractor shall provide both electronic and hard copies of its safety manuals, policies and procedures to uMkhanyakude District Municipality and shall ensure that its personnel, always, strictly observe and comply with the procedures set out therein. uMkhanyakude District Municipality or uMkhanyakude District Municipality’s nominated Representative may from time-to-time request safety procedures applicable to the area of operations. The Contractor shall forward to uMkhanyakude District Municipality any updates or revisions to its safety manuals, policies or procedures as soon as practicable following revision or update.

uMkhanyakude District Municipality may require the Contractor from time to time to supplement its safety manual, policies, and procedures with guidelines and/or operating standards provided to the Contractor by uMkhanyakude District Municipality. The Contractor shall comply with such requests where the request is consistent with the requirements of the Contract. The Contractor shall give prompt written notice to uMkhanyakude District Municipality of any objection to the requested supplement, including the reasons for objection. uMkhanyakude District Municipality’s rights under this Clause are not intended, and shall not be construed, to relieve the Contractor from any obligations to ensure compliance with all provisions of this Contract.

5.2 Performance Measurement and Reporting

5.2.1 Health and Safety Statistics

The Principal Contractor/Contractor shall ensure injury and incident records (Near misses/Hits, First Aid, Medical Cases, Disabling Lost Time Incidents, Accident Frequency Rates, Accident Incidents Rates, Disabling Injury Severity Rate/Accident Severity Rates), training etc. referred to above are kept on site and submitted monthly to the Engineer. All documents shall be made available to the Engineer for inspection including the Department of Labour’s Inspectors as required by OHSA.

The statistics formula as listed below shall be adhered to during construction:



DIFR (Disabling Injury Frequency Rate)/
AFR (Accident Frequency Rate) $\frac{\text{Total number of DI's in a period}}{\text{Total Number of Man-Hours worked in a period}} \times 100,000$

DISR (Disabling Injury Severity Rate)/
ASR (Accident Severity Rate) $\frac{\text{Total number of Days Lost in a period}}{\text{Total Number of Man-Hours worked in a period}} \times 1000$

AIR (Accident Incidence Rate) $\frac{\text{Number of Defined Accidents}}{\text{Average Number Employed}} \times 1\,000$

5.2.2 Safety Management Records

The Contractor shall submit to uMkhanyakude District Municipality for acceptance a schedule of the specific Health and Safety records it intends to maintain for the Contract. As a minimum, such records are as specified by applicable legislation. Copies are provided to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative if requested.

5.2.3 Field Technical/Safety Audit by uMkhanyakude District Municipality

uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative have the right to conduct audits/inspections of the Contractor's Safety Management Plan implementation, operations, equipment, emergency procedures, etc at any time, and the Contractor shall fully cooperate with uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative during such audits/inspections.

uMkhanyakude District Municipality's rights under this clause do not/shall not and will not relieve the Contractor of its own obligations to conduct audits and reviews of its own Health and Safety performance.

Where such audits/inspections reveal deficiencies in the Contractor's procedures, drills, training or equipment, or non-conformities with the Contractor's accepted project Safety Management Plan, of a minor nature (Risk Rating of 6 or less), the Contractor shall investigate the cause of the nonconformity and initiate corrective and preventive action to rectify such deficiencies and non-conformities and prevent recurrence as soon as practicable.

Where such audits/inspections reveal deficiencies of a major nature (Risk rating of 7 or greater), the Contractor **shall stop work on the operation/activity concerned, immediately investigate the cause of the nonconformity, and initiate corrective actions to rectify such deficiencies and non-conformities and to prevent recurrence.** These corrective action plans are submitted to uMkhanyakude District Municipality for review and comment within 24 hours of the audit finding.

Where such deficiencies include an unsafe practice or a breach of the statutory or the Contract's requirements, uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative **may in accordance with the General Conditions of Contract suspend the work associated with the unsafe practice or breach until the deficiency is rectified.**

uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative will establish a schedule of regular field safety audits which will be based on an audit tool aligned to the Contractor's Safety Management Plan and site operations and activities. The Contractor's audit conformance will be assessed as a percentage and where conformance is better than 90% it will be considered satisfactory and the Contractor



shall develop and implement an action plan/close out report within 7 calendar days, to be emailed to the Clients Health and Safety Agent and Auditor. Where the Contractor's level of conformance is between 75 – 90%, a corrective action plan will be required to be developed and implemented within 7 calendar days, and a follow up audit will be carried out. **Where the Contractor's conformance is less than 75% the Contractor shall stop work until an investigation of the cause/s has been completed and corrective actions have been developed and implemented by the Contractor.**

The Contractor shall provide to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, at a time to be agreed, not to exceed monthly intervals, a regular status report on all outstanding corrective actions until they are successfully closed out.

Note: The Contractor is required to use the corrective action report template as per Annexure 11 when reporting on audit findings and close outs.

5.2.4 Unsafe Act/Condition Auditing

The Contractor shall implement a system to recognise, correct, and report unsafe acts/conditions (Unsafe Act/Condition Auditing) associated with all Site activities.

5.3 Involvement Communication and Motivation

The Contractors' and subcontractor's workforce shall, through their supervision, safety notice boards, toolbox meetings and daily pre-start meetings be kept aware of safety related matters.

5.3.1 Safety Meetings

The contractor shall implement and comply with OH&S Act, Section 19

The Contractor shall conduct weekly safety meetings with his employees to foster safety awareness. Copies of minutes and action items arising from such Toolbox meetings is submitted or otherwise made available for review by uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

Such meetings should at least address:

- Accident / safety incidents
- Hazardous conditions
- Hazardous materials / substances
- Work procedures
- Protective clothing / equipment
- Housekeeping
- General safety topics
- Job or work look-ahead issues
- Safety statistics
- Significant Safety Occurrences (SSO)

The Contractor shall conduct at least one formal safety meeting per month and shall maintain appropriate records of attendance and meeting content. Such records are made available to uMkhanyakude District Municipality Representative.

In addition to Daily Safe Task Instructions, the Contractor shall conduct at least two (2) "tool box" meetings per week to discuss safety issues and procedures and shall be recorded in writing.

5.3.2 Pre-Start Safety Briefings

The Contractor shall hold documented Daily Safe task Instructions with each work team before the start of each shift. Attendance records and brief topic notes is kept for auditing and record purposes.

5.3.3 Safety Review Meetings

The Contractors' Site Manager and a Site Safety Representative shall take part in weekly safety review meetings between the Contractor's and uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

The Contractor shall attend all project safety meetings as outlined in the Project Safety Management Plan.

5.3.4 Employee Health & Safety Representative

In all cases where 20 or more people work on a project, a Health and Safety Representative shall be elected and appointed, as described in the OHS Act Section 17 and General Safety Regulations 6 and 7, at a rate of one Health and Safety for every 50 employees or part thereof.

The Contractor shall ensure that sufficient elected and/or appointed Health and Safety representative/s represent all workers employed by the Contractor. Each elected and/or appointed Health and Safety Representative is required to attend an accredited Health and Safety Representatives training course, at the expense of the Contractor, in accordance with the provisions of the applicable legislative requirements.

The Contractor shall ensure that elected and/or appointed Health and Safety Representatives execute their functions as under the provisions of applicable legislation.

An appropriate sticker is to be issued by the Contractor and affixed to a **DARK GREEN** helmet to identify each Health and Safety Representative.

5.3.5 Health & Safety Discipline Procedure

Where a breach of a Site Health & Safety rule or The Contractors safety Procedure is identified the Contractor shall ensure that any disciplinary action taken is in accordance with an approved procedure. In the absence of a disciplinary procedure and dependent on the nature of the breach, the process as outlined below should be used:

- First breach – verbal warning/counselling
- Second breach – written warning/counselling
- Third breach - appropriate disciplinary action taken

Where a breach of a Health & Safety rule has occurred and is considered blatant, the person's Site Access may be withdrawn at the discretion of uMkhanyakude District Municipality's Construction Manager or Health and Safety Agent after consultation with the relevant persons.

Should an NCR be raised, concerning Health and Safety Matters, by uMkhanyakude District Municipality's Health and Safety Agent, against the any Contractor (Principle or Sub-Contractor) for serious deviations/ unsafe acts/ unsafe condition being condoned, etc, the recommendations within the NCR will be final and can include, but not be limited to, a Fine of R10,000.00 per NCR and/or the removal of persons from site, or the termination of a contractor's services on the project.

uMkhanyakude District Municipality's Health & Safety Agent will also be compelled to report such offences to the relevant statutory professional body to which the offender is registered (as required).

5.4 Contractor Management

5.4.1 Subcontractor's Safety Management Plan

The Contractor shall ensure that all its sub-contractors have written Safety Management Plans in place and implemented that are of a standard suitable for the type of activity being undertaken, which address the hazards involved with the particular work activity, and which support the Contractor's accepted safety management approach. The Contractor shall ensure these Plans are in place before allowing sub-contractors to mobilise to site. Subcontractor Safety Management Plans shall include management of transport and delivery Contractors entering the site delivering materials and/or equipment.

5.4.2 Working Together for a Safe Site

The Contractor and its subcontractors shall actively participate in any programs and/or activities designed to improve the Health and Safety performance on the project.

5.5 Training and Competency

5.5.1 Contractor Personnel Competency and Responsibility for Health and Safety

Prior to the commencement of the work, including mobilisation and site set-up activities, the Contractor shall provide current documentation to the satisfaction of uMkhanyakude District Municipality verifying that the Contractor's and subcontractor's personnel are competent and have the appropriate qualifications, job skills and training as required by this Contract and applicable laws.

The Contractor shall ensure that all his employees and his Sub-Contractors' employees working on the site are adequately trained in the type of work to be performed, are trained in relevant procedures and have the appropriate qualifications, certificates and tickets, and are under competent supervision. Records are to be maintained on site of appropriate training and qualifications of all employees by each Contractor.

The Principal Contractor and all contract employees are holders of current certificates or licenses, where the operation being performed requires such (for example, Crane Drivers Certificate, Riggers and Scaffolders Certificate, Welding Certificate, etc.) All to be in compliance with Legislation, National Qualification Framework Act, 2000: Act No 67 of 200 (e.g., SAQA, CETA, HWSETA or similar registered course as applicable) or applicable industry standard where legislation does not prescribe or have registered courses to meet the requirements.

Certificates of training and/or a letter from 16 (2) certifying a person's competency and test of competency is submitted at the induction centre for each employee as well as a man/job specification.

Note: No certificates that are aligned to unit standards will be accepted. The course providers shall be accredited course providers, and the certificates issues shall be accredited wherever unit standards exist.

Proof of the following minimum Safety Training is required before any work may commence:

- Construction Health and Safety Officer (CR8(5)) – SAMTRAC (Or equivalent – approved by uMkhanyakude District Municipality Agent) and at least 5 years construction safety experience and 2 years working at heights experience.



- Risk Assessor (CR9(1)) - to have completed a SAMTRAC & SAQA Accredited Risk Assessors (HIRA) course or equivalent.
- Management and Supervisory personnel and foreman (All Sect 16.2 and CR8(1) appointees) – Supervisor's Safety course – (IRCON 24-hour course or equivalent approved by uMkhanyakude District Municipality) and a certificate of competency as required by regulations regarding competency
- Workforce – (Basic Health & Safety Training)
- Trained, elected, and appointed Safety Representatives per area in the following ratio: (**OH&S Act - Section 17 &18 and General Administrative Regulations 6 and 7**)
- Up to 50 people on site = 1 Representative
- And 1 for every 50 or part thereof thereafter
- Trained and appointed First Aiders per area in the following ratio: (**OH&S Act – General Safety Regulation 3**) at least one First Aider to hold a Level 3 certificate and be on site fulltime.
- Up to 50 people on site = 1 First Aider
- And 1 for every 50 or part thereof, thereafter

When teams are working in separated areas uMkhanyakude District Municipality Representative may instruct the Contractor to appoint First Aiders and Safety Representatives per work area regardless of if less than fifty people are working in an area.

The Contractor is responsible for offloading all deliveries of materials, equipment, etc delivered to the Site, including the competence of transport and delivery Contractors entering the site.

Generally, all equipment operators will be required to be re-assessed, using the equipment provided and, in the conditions, existing on site, in relation to heavy vehicle/light vehicle operation and interactions.

The Contractor represents and warrants that its supervisors are competent and have been trained and advised in writing that they are responsible, and have accepted and acknowledged such responsibilities in writing, for ensuring that the work is performed in accordance with all applicable laws, rules and regulations, good working practices, and any additional guidelines and/or operating standards provided to the Contractor by uMkhanyakude District Municipality.

The Contractor shall, develop a Personal Safety Action Plan for each key staff member that lists actions to be taken and responsibilities. These plans are regularly audited by the Contractor's Project Manager. The Contractor's Project Manager will have his Personal Safety Action Plan audited by uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

The Contractor shall at uMkhanyakude District Municipality's request, provide uMkhanyakude District Municipality with organization charts, specifying the areas of safety responsibility of supervisors. The Contractor's Supervisors shall assess and assure themselves that employees under their control have adequate skills and training to carry out their tasks and will not be permitted to perform tasks for which they have not been adequately trained.

The Contractor's and/or subcontractor's employees shall, where required by legislation & where accredited courses are available, be the holders of current relevant Government Department Certificates or Permits where the operation being performed requires such certification, for example:

- Fitters

- Welders
- Boiler makers
- Crane and Hoist Drivers
- Crane Chasers, Banks man, Doggers
- Riggers (Qualification & Experience Specific to level of rigging required).
- Scaffolders
- Plant Operators
- Shot Firers
- Winch Drivers
- Explosive Tools Operation
- Demolisher
- Electricians
- Plumbers
- Gasfitters
- Trade Assistants
- Steel fixers
- Carpenters
- Concrete Finishers etc

The actual list will depend on applicable regulations regarding competency.

Contractor's and subcontractor's employees carrying out the following designated tasks require specific authorisation by uMkhanyakude District Municipality, i.e.:

- Operation of mobile equipment including cranes and work platforms
- Slinging of loads from, and the direction of movement of loads by, cranes and other lifting devices
- Erection and dismantling of scaffolding more than 4.5 meters in high.
- Driving light vehicles, buses, trucks, etc
- Supervising Excavations deeper than 1.5m

The Contractor shall request authorisation of persons nominated to perform these tasks, with 2 weeks' notice, and shall support that request with copies of competency certificates, including driving license, and relevant medical certification, copies of logbooks or work experience that can be verified, and a written statement attesting to the fact that the employee is competent to perform the nominated function. Note that medical examinations for drivers and crane operators are specific to the trade. Copies of all such evidence of competence are logged in a Register maintained by the Contractor. The Contractor shall provide electronic copies of such Register/s to uMkhanyakude District Municipality upon request.

uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative may at any time conduct a task observation as to the ability of any operator of equipment or person carrying out a nominated specific task, to carry out that task in a safe and competent manner. If U uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative is of the opinion that the person is not "currently competent", that person shall cease work immediately, undergo



the necessary retraining or be removed from that activity. Retraining is at the Contractor's expense.

5.5.2 Training

5.5.2.1 Induction in Health and Safety

Comply with: OH&S Act - Section 8

The Contractor shall ensure that no employee of the Contractor or its subcontractors, including transport and delivery Contractors entering the site delivering materials and/or equipment, shall proceed to enter the Site or any operations area until they have received all training required under applicable laws and regulations, including, but not limited to, work activity inductions and uMkhanyakude District Municipality's Site-specific induction. This Project induction has a "life" of 12 months, after which re-induction is required.

The Contractor shall also prepare and present to all its employees its own Contractor Induction, explaining the Contractor's Safety Management Plan, the Contractor's Rules, the obligations imposed by the Occupational Health and Safety Act and Regulations, the Project Safety booklet, as well as a Site-specific induction, which shall as a minimum consist of an introductory briefing explaining the nature of the work, the general hazards which may be encountered during the operation, and the particular hazards attached to their own function within the operation and how these hazards is identified and accounted for.

The Contractor shall ensure that all its employees and the employees of its Sub-contractors working on-site are adequately trained in the type of work to be performed and are trained in relevant procedures and have the appropriate qualifications, certificates and tickets and are under competent supervision. Records are to be maintained of appropriate training and qualifications.

The Contractor shall ensure that all its personnel and its subcontractor's personnel receive a copy of the Contractor's Health and Safety training manuals or handbooks relevant to their jobs which shall detail Health and Safety code and conduct, personal safety protection, emergency Health and Safety response and personal health conduct. The Contractor shall provide uMkhanyakude District Municipality with details of ongoing training programs and shall provide uMkhanyakude District Municipality with all related revisions during the term of this Contract. The Contractor shall provide programs for the above to overcome any language, literacy, or comprehension impairments.

A full day is set-aside for Induction and production of appropriate photo identification of all employees.

Prior to induction all employees shall undergo a pre-employment medical examination (If required) and found fit for duty. A copy of the certificate of fitness is presented for permanent record at the induction centre and kept at site offices for permanent record to be transferred to uMkhanyakude District Municipality on project completion. Employees found with health conditions and need to receive chronic medication, shall be monitored as to the effect that medication are taken.

Employees shall not have access to the site until they have completed this induction. The Contractor shall keep a record of all inducted personnel.

Before commencing work the following induction-training courses are attended:

- Site Induction uMkhanyakude District Municipality
- Contractors' job specific Induction uMkhanyakude District Municipality construction

Proof of job specific induction signed by Inductor and trainee is submitted at the induction centre before a badge is issued.

In addition to the basic safe working practices induction, the Contractor shall ensure that all his employees and those of his sub-Contractors are inducted in site-specific safety issues.

The Contractor shall ensure that badges and exit medical certificates are submitted to uMkhanyakude District Municipality site representative when people are demobilised; failure shall result in withholding of final payment until exit medical certificates are received and or a penalty of R200-00 is paid for every badge not submitted.

Contractors should ensure exit medical, and badges are received before final payment of employees.

5.5.2.2 Emergency Procedures

The Contractor shall ensure that all personnel on the Site, including visitors, are properly instructed in the Site emergency response procedures. Drawings and plans, indicating emergency equipment and escape routes shall be displayed on notice boards and other places as may be required.

5.5.2.3 Isolation Procedure Training

The Contractor shall comply with and train their employees in the Site requirements in relation to Hazardous Energy Isolation. The level of training is dependent on the position and responsibilities of the employee.

No person who has not been properly trained and assessed as competent will be allowed to isolate any item of equipment or plant.

5.5.2.4 Contractors Health and Safety Management Handbook

The Contractor shall develop a Health and Safety Management Handbook that will summarise the requirements of the Contractor's Health and Safety Management Plan and Contractor's Rules. The document is in a format that can be issued to all employees at inductions and prior to that employee commencing work on Site and is maintained for reference by all employees. uMkhanyakude District Municipality shall approve the format and contents of the Handbook prior to its issue.

The Contractor shall ensure that each employee acknowledges receipt of the Contractor's Health and Safety Management Handbook by way of signature. The Contractor is responsible for producing these records of signature and acknowledgement if audited.

Where reading skills and/or language is an issue with the workforce the Contractor shall propose an alternative to the above, maintaining the intent of the above, for acceptance by uMkhanyakude District Municipality.

5.6 Hazard and Risk Management

Prior to the commencement of the work, including mobilisation and site set-up activities, the Contractor shall demonstrate to the satisfaction of uMkhanyakude District Municipality that the Contractor has performed hazard identification and risk assessment of the Work, and of the associated equipment and facilities, to meet the requirements of the Contract. The Contractor is responsible and accountable for ensuring that effective procedures and assessment systems are in place to control hazards and so mitigate risks to as low a level as is acceptable and to meet all the Health and Safety management requirements under this Contract.

5.6.1 Project Specific Hazards

uMkhanyakude District Municipality Project manager will identify specific job-related hazards applicable to the Work under the Contract and inform the Contractor thereof.

5.6.2 Hazard and Facility Review Studies (RAMBO)

The Contractor shall ensure that Hazard Identification studies is incorporated into the Contractor's Design Management Plan and scheduled at appropriate stages of the design process.

The Contractor shall make available suitably qualified and experienced personnel to participate in these studies. uMkhanyakude District Municipality and/or uMkhanyakude District Municipality's nominated Representative will also participate. The Contractor is required to provide all input data for the conduct of the studies.

The Contractor is responsible for the implementation of the study findings and shall carry out any modifications to design or plant required by the outcomes of the studies.

uMkhanyakude District Municipality has made all reasonable efforts to ensure that the safe and clean design input information provided is complete and correct. However, the Contractor shall make its own assessment of the hazards and risks associated with the Work under the Contract, consistent with the requirements of the Contract and the obligations imposed by all applicable legislation.

5.6.3 Hazard Identification and Risk Assessment Workshops

The Contractor shall conduct, with appropriate personnel, Construction Safety Studies to identify the detailed methodology and related hazardous activities, in particular those with potentially catastrophic consequences such as multiple and single fatalities, of the Contractor's Site installation work scope, for example crane operations and positions, lift sizes, work at height locations, confined spaces locations, work near operational plant, hot work, hazardous substances and dangerous goods being used, etc.

The Contractor shall also conduct, with appropriate personnel, Preliminary Hazard Assessment (PHA) workshops to identify the work methodology and related hazardous activities, in particular

Those with potential for fatality or serious injury, of tasks and activities related to particular work packages or locations. In all circumstances the objective of these risk management processes will be to eliminate hazards or otherwise reduce risks through the hierarchy of controls.

Where the PHA workshop identifies that administrative controls (procedural controls) have to be used to reduce the risk to an acceptable level, then the Contractor's work crew or individual if it is a one-person task, shall carry out a Job Hazard Analysis (RA) of the task or activity, which will result in a Work Instruction for routine tasks and activities or the documented RA for non-routine, one-off or changing tasks and activities. RA's will be reviewed by the Contractor prior to starting work each day or shift, and Work Instructions prior to starting work each week.

A five stage hazard identification (define job, identify hazards, assess risk, control risk, monitor) and risk assessment process will be implemented by the Contractor for commissioning and start-up activities, conducted on all system commissioning and live testing operations, activities and tasks prior to introducing hazardous energy and/or materials.

The Contractor's Site Management Representatives, supervisory personnel, technical experts as required, and work force personnel directly involved will participate in these hazard and risk assessment processes, and the findings documented. uMkhanyakude District Municipality, and/or uMkhanyakude District Municipality's nominated Representative shall attend the workshops / studies. At these workshops/studies the Contractor's methodology may be reviewed task by task, potential hazards identified, and actions agreed on to mitigate risk.

5.6.4 Risk Assessment of Plant and Equipment

Risk assessments of plant and equipment is undertaken and documented before arrival at site and after major service, after modification, and before use in an unusual operating



mode. They are undertaken by a suitably qualified and experienced person and is reviewed and signed by the Contractor Project Manager or Equipment Supervisor.

Such risk assessments for equipment mobilising to Site is reviewed and accepted by uMkhanyakude District Municipality, or uMkhanyakude District Municipality's nominated Representative prior to the equipment arriving at Site, and shall consider, where applicable, potential for entanglement in moving parts, crushing or striking by moving or falling objects, cutting or stabbing by sharp objects, high pressure fluids, electrical shock or burns, burns from hot or cold surfaces, slips, trips and falls, ergonomic design of access and egress (3 points of contact to be maintained), seating, vibration, noise, exhaust fumes, etc. The identification of hazards should consider normal operations, abnormal or unusual operations, maintenance, and servicing operations. Particular attention is given to fall protection attachment points when there is a requirement to work over 2 meters above the ground (servicing earthmoving equipment for example).

The contractor shall implement and comply with OH&S Act - Electrical Machinery Regulation 9.

The Contractor shall ensure that all plant, equipment, power and hand tools brought onto the site by the Contractor, or his sub-Contractors are:

- Appropriate for the type of work to be performed
- Approved, inspected, tested, numbered, and tagged (if appropriate) in accordance with Occupational Health & Safety Statutory regulations and uMkhanyakude District Municipality rules, before importation onto the site
- Properly maintained in accordance with manufacturer's recommendations
- Placed on register and checked at least monthly and or more frequent as required by required by Legislation and or uMkhanyakude District Municipality rules

Construction Plant and Equipment

The contractor shall implement and comply with OH&S Act - Electrical Machinery Reg. 9, Driven Machinery Reg. 1 – 20, Electrical Machinery Regulations and Electrical Installation Regulations

The Contractor shall supply, at his cost, all items of plant and equipment necessary to perform the work and shall maintain all items in good order and condition.

Should any plant or equipment become inoperable for a period considered by uMkhanyakude District Municipality Representative to be harmful to the progress of the work, the Contractor, on uMkhanyakude District Municipality Representative's instructions, shall remove the unserviceable plant or equipment and replace it with similar serviceable plant or equipment at no cost to uMkhanyakude District Municipality.

No item of plant or equipment delivered to site for this Contract is removed from the site prior to the completion of the Contract without the written approval of uMkhanyakude District Municipality Representative.

uMkhanyakude District Municipality Representative reserves the right to inspect items of plant or equipment brought to site by the Contractor for use on this Contract. Should uMkhanyakude District Municipality Representative from the opinion that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, uMkhanyakude District Municipality Representative shall advise the Contractor in writing and the Contractor shall forthwith remove the item from the site and replace it with a safe and adequate substitute. In such cases, the Contractor shall not be entitled to extra payments or extensions of time in respect of delay caused by uMkhanyakude District Municipality Representative's instructions.

Standard and Performance Registers

As standard project procedures, the Contractor is expected to:



- Set up an initial set of registers
- Complete the registers for each piece of plant, tool & equipment brought onto site
- Maintain a complete, continuous, and comprehensive inspection & service history in these registers

Ensure at least monthly inspections are done and recorded for all plant, tools & equipment by a competent person.

5.6.5 Method Statement

The Contractor shall submit Safety Method Statements to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative for approval prior to the task commencing (the Contractor shall factor in at least ten (10) working days for a Safety Method Statement review, this does not necessarily mean that approval will be within ten (10) working days as amendments may be required and the Method Statement resubmitted for review). Safety Method Statements are to be submitted before or with the Risk Assessment and prior to the work commencing or on request of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

Acceptance of a Safety Method Statement by uMkhanyakude District Municipality shall not relieve the Contractor of responsibility for ensuring full compliance with Contract specifications and conditions. Specific Work Method Statements may also be required by legislation. Note: an approved Safety Method Statement is useless without the corresponding Approved Risk Assessment.

The Contractor shall record the Safety Method Statement on uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative format (See Annexure 2). The Task Items listed in the Safety Method Statement shall tie up exactly with the task items being assessed in the Risk Assessment document.

The Safety Method Statement shall detail in a step by step and methodical manner how the task is to be done from beginning to the end and shall indicate what tools/equipment will be used at each stage and/or how the work area is to be accessed.

5.6.6 Critical Hazard Management Plan

Where the Contractor identifies a Critical Hazard, that is one that has the potential to cause multiple fatalities and the exposure is not an isolated occurrence, it shall develop a Critical Hazard Management Plan to control the risk. These Plans are submitted to uMkhanyakude District Municipality for review and be entered in the Site Risk Register. Journey hazards to and from the Site should be included.

The plans are periodically reviewed (every four months) for applicability and suitability.

5.6.7 Risk Assessment

As described above, prior to the commencement of each work activity, or as requested by uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, a Risk Assessment (RA) is completed, documented and submitted to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative for approval prior to the task commencing (the Contractor shall factor in at least ten (10) working days for an RA review, this does not necessarily mean that approval will be within ten (10) working days as amendments may be required and the RA resubmitted for review).

The purpose of the RA is to identify all potential hazards associated with the Work and the Work environment, assess the risk these hazards present and then to provide risk control action that deals with those hazards, as well as providing to the workforce involved in the particular work activity, details of any hazards and the proposed controls.



The Contractor shall propose the RA process and shall record the RA on uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative format (Annexure 1, as attached), considering the requirements below. The documented RA and/or resulting Work Instruction is completed by the work crew and job supervisor, and at least one team member is skilled and experienced in the RA / risk assessment process. Completed RA's is available for review by the work crew, uMkhanyakude District Municipality, and uMkhanyakude District Municipality's nominated Representative upon request.

The Risk Assessment shall:

- Describe the operation to be performed in the sequence of the basic job steps.
- Identify the hazards or potential hazards at each step.
- Identify the possible consequences for each hazard at each step.
- Assess the Initial Risk Score that each hazard presents (Probability x Severity x Frequency), the total score will be used to identify the Risk Ranking/Priority Factor. Once control measures have been considered and implemented, a Revised Risk Score shall be allocated to each hazard.
- Identify the Site Rules that apply.
- Describe how the hazard is controlled such that the residual risk is as low as reasonably practicable (ALARP) and is acceptable to the work crew (remembering that PPE is the last resort and elimination, and engineering controls shall always be considered first).
- Identify the related Work Instruction if appropriate.
- Be reviewed prior to each shift.
- Be acknowledged by way of signature of all personnel involved in the work activity.

Should the Contractor's appointed Risk Assessor continually submit sub-standard Risk Assessments, this would indicate that the Risk Assessor lacks the knowledge and experience required, uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative reserves the right to ask that the appointed Risk Assessor is replaced with a more competent and experienced Risk Assessor.

The sub-contractors shall also comply with competency, content and format requirements of the Risk Assessments as listed above. It is the Contractors responsibility to review and approve their sub-contractors Risk Assessments to the same standard as uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative would review it to. uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative reserves the right to inspect the sub-contractors risk assessments and if found to be sub-standard then those tasks affected by the sub-standard risk assessments will be stopped until the risk assessments are amended to a satisfactory level.

5.6.8 Unsafe Operations

If the Contractor believes that the work cannot be safely undertaken or that continuance of the work may result in unsafe conditions, it shall immediately cease the operation until a safe method of work has been identified. The Contractor shall always make every effort to control or overcome the cause, or minimize the effect of, any unsafe condition.

5.6.9 Work in Operating Areas

When the Contractor is working in close proximity to operating cranes, roads, access ways or other equipment and a safety hazard has been identified, the Contractor shall provide safety watchers as necessary or as directed by uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and shall provide, erect



and subsequently dismantle all the required barriers, flags, wheel stops, buffer stops, flashing lights or other safety equipment to enable its operations to proceed in a manner which satisfies uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative. At all times, defined access ways are kept clear of objects or obstructions which could cause injury to personnel or damage to equipment or plant.

The Contractor warrants that the Contract rates and prices include for all safety watchers (spotters or look-outs), signs, lights, barriers, traffic barricades, protective shielding and the like required for the protection of personnel, plant, and construction operations.

5.6.10 Hazardous Materials

The Contractor shall set out its policy for the use, transportation, handling and storage of fuel and hazardous materials considering the legislative requirements.

The Contractor shall ensure that all hazardous materials and waste products are disposed of in accordance with applicable laws and regulations and any procedures published by uMkhanyakude District Municipality or in the absence of any relevant law, regulation, or procedures, in accordance with sound safe practice.

5.6.11 Hierarchy of Control

The Contractor shall ensure that all risk and hazard controls are applied in accordance with the 'Hierarchy of Control' methodology.

Control measures to eliminate or minimise the risk is considered and implemented in the following order of priority:

- 1 **Elimination** of the hazard is the main objective.

If this is not possible, prevent or minimise exposure to the risk by one or a combination of:

- 2 **Substitution** - substituting a less hazardous material, process, or equipment
- 3 **Isolation** - isolating the hazard from the person or the person from the hazard
- 4 **Engineering** - redesigning equipment or work processes
- 5 **Administration** - introduce administrative controls

As a last resort, when exposure to the risk is not (or cannot be) minimised by other means:

- 6 **PPE** - identify and use appropriate personal protective equipment

5.6.11.1 Management of Change

The Contractor shall develop a Procedure and system to manage the change process. This Procedure and system shall address the required processes to ensure that proposed changes do not give rise to unacceptable risk to health, safety, assets and/or the environment.

The change management process shall aim to ensure the following

- Changes are identified and recognised
- Careful consideration is given to managing the Risks associated with any change
- Due diligence can be shown to have taken place
- A reduction in the number of unsatisfactory or unnecessary changes
- Involvement of the right people in the change process
- All statutory requirements are met

The change management controls shall apply having regard to the fact that change may be planned, sudden or gradual.

5.6.12 Construction Regulation

In addition to uMkhanyakude District Municipality Risk assessment requirements above, the contract shall implement and ensure compliance with: Construction Regulations.

5.7 Occupational Health and Hygiene

5.7.1 Fitness for Duty

The Contractor shall ensure that personnel under its control and authority comply with the requirements of the Fitness for Duty Policy and are bound by its disciplinary provisions, regarding the possible effects of:

- General level of personal fitness and/or medical conditions
- The consumption of alcohol
- The use of other drugs (prescription, pharmaceutical or illicit)
- Fatigue
- Stress

5.7.2 Alcohol and Other Drugs

The Contractor shall ensure that personnel under its control and authority do not at any time, during the performance of the work, take or work under the influence of any alcoholic and/or other drug other than for bona fide medical reasons or other proper reasons that have been approved in advance and in writing by uMkhanyakude District Municipality Project Manager. The measures to be taken by the Contractor shall include a drug test prior to such personnel starting work on the site. The Contractor shall ensure that personnel under its control and authority comply with the Project site program of random testing for alcohol and other drugs.

5.7.3 Health Assessments and Health Monitoring

The Contractor shall ensure that all the Contractor's personnel are healthy and medically fit for their respective assignments and shall certify the same to uMkhanyakude District Municipality if so requested. The Contractor is responsible for pre-placement and exit medicals and ongoing health assessments.

The Contractor shall ensure that operators of mobile equipment undergo "fit for work" medical examination every 1 year and crane operators engaged in lifting man boxes every 5 years. This medical is to certify that the medical practitioner has examined the operator and formed the opinion that the operator is free from deafness, defective vision, epilepsy, heart disease, and any other infirmity likely to cause the operator to lose control of the machine being operated.

The Contractor is responsible for the medical welfare of its own employees, servants or agents and their families.

All medicals to include the Annexure 3 form as per the Construction Regulations 2014, signed and stamped by the occupational medical practitioner.

5.7.4 Hygiene

The Contractor shall ensure that its personnel and subcontractor's personnel shall maintain high standards of hygiene in connection with the performance of the work.

The Contractor shall maintain all work areas in a clean and tidy state and shall promptly and appropriately dispose of waste material.

Resting and Eating areas are kept in a clean, tidy manner and are positioned away from contaminants and hazards to the satisfaction of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and any statutory requirements.

Due to the nature of this site no eating and drinking may take place outside the designated eating or office area facilities are to be made easily available for persons to wash hands when leaving the construction area and entering the construction site offices.

5.7.5 Cleaners, Solvents and Hazardous Materials

No chemical, which is potentially hazardous, is brought onto the Site without the prior acceptance of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

The Contractor shall submit to uMkhanyakude District Municipality a Materials Safety Data Sheet (MSDS) with its request for acceptance of each hazardous substance the Contractor proposes to use at the Site.

The Contractor shall ensure that all necessary transport, storage, and usage precautions are taken and that safety equipment, including antidotes, if necessary, are available on the Site.

5.7.6 First Aid Services

The contractor shall implement and comply with OH&S Act - General Safety Regulation 3

The Contractor shall provide a person qualified to give first aid attention on the Site at all times that the Contractor is carrying out work on the Site. The minimum qualification is that provided by the St John's Ambulance Brigade or as prescribed in the **OH&S Act – General Safety Regulation 3**.

The Contractor shall provide and maintain first aid equipment on the Site. The equipment is to a standard as laid down by the Statutory Regulations.

5.7.7 First Aid Boxes

To be provided with contents as per minimum legal requirements. Boxes is provided in all working areas and kept locked. Record to kept, in an appropriate register of all treatment done. (**SABS 1186** approved signs to indicate location of first aid boxes)

5.7.8 Emergency Numbers

Lists with emergency numbers to be posted at phones and in every office. Provide workers with stickers to place inside their hardhats with emergency numbers printed on stickers.

5.7.9 Smoking

The Contractor shall not permit smoking at the Site except within designated smoking areas selected in accordance with applicable laws, rules, regulations, and policies.

5.7.10 Sun Protection

The Contractor shall ensure that all personnel are protected in sunlight using long sleeve shirts, long trousers, brims to safety helmets, UV factored sunscreen and shade structures.

The Contractor shall conduct training and awareness sessions with its workforce, advising on the risks of working in the heat and dehydration and the precautions to be taken including an acceptable fluid intake depending on conditions. The Contractor shall ensure that adequate water is always available to its workforce.

5.7.11 Working Hours

The Contractor is responsible for the administration of the working hours of its employees and subcontractors. Maximum working hours per day and minimum rest times between shifts is specified in the Contractor's Health and Safety Management Plan and shall comply with the requirements for the project site unless specifically approved by uMkhanyakude District Municipality.

5.8 Safe Systems of Work

5.8.1 Typical Activities Requiring Safe Work Procedures (SWP's)

Guidelines of typical construction activities for which SWP's is provided before starting work on site by the Contractor (To be attached to Risk Assessments)

- Site establishment, Firefighting and evacuation, Rubble and refuse removing, Stacking, and storing, Housekeeping, Loading & off-loading of vehicles etc

5.8.2 PPE

Safe Systems of work to address specific PPE requirements over and above the minimum requirements as per the Site Rules taking into account items of PPE that might not be compatible with the user or with other PPE (e.g., if the user has spectacles and is required to wear a full-face respirator, the spectacle arms will break the seal and will not provide the required protection). PPE is also to be seen as the last resort and engineering controls should be put in place whenever possible.

5.8.3 General

Work areas – benches, containing of sparks, Barricading and handrails, Safe Access and egress, Evacuation and emergency procedures, Backfilling and compacting, Shuttering & Form work, Lifting and rigging, Steel fixing, Pouring of concrete and floating, Elevated work, Use of ladders, Roadwork and Fuelling of machines.

5.8.4 Scaffolding

Erection, Dismantling.

5.8.5 Activities per Discipline

Civil, Structural, Pipefitting, Mechanical, Electrical, Instrumentation, Bricklaying, Roofing and cladding, Installation of cable racks, Cable pulling, Work in confined spaces, Stock keeping and control, Grit blasting, Demarcation

People activities like:

Grinding, Welding, Using Jack Hammer, operating of machines, Cutting, Compacting, Crane operating etc.

5.8.6 Personal Protection

The contractor shall implement and comply with OH&S Act – General Safety Regulation 2

5.8.6.1 Standard PPE

All Contractors' personnel at the site, including visitors, shall use the following minimum personal safety equipment at all times and shall comply with relevant SABS/EN/EC codes:

- Safety head protection with chin strap (**SANS 11451** approved)
- Safety footwear with steel toe protection.
- Safety glasses with side shields (UVEX type or equivalent)
- Hand Protection as required
- Long trousers
- Long-sleeved shirts with cuffs and collars and reflective taping as required
- High visibility Reflective Vests.
- Hearing and respiratory protection as required
- Suitable protective clothing (Overalls for all employees conducting physical working)

Personnel exposed to noise levels exceeding 85dB (A) for any period of time or where signs indicate hearing protection is required to wear (**SANS 11451** approved) hearing protection. Note: NIHL (noise induced hearing loss) assessment should be conducted, where appropriate, by a competent person (Registered Occupational Hygienist) and recommendations and control measures followed.

Other personal protection items such as gloves, face shields, leather spats, safety harnesses, aprons or other such items may be specified for use by legislation, the Scope of Work or uMkhanyakude District Municipality Representative. Personal protective equipment shall also be worn, if recommended by manufacturers or suppliers of proprietary products or equipment.

All personnel engaged in maintenance and operational activities shall use the minimum personal protection applicable at the site.

PPE shall be issued to all workers free of charge (unless otherwise damaged or lost by the employee) and a record of issuing shall be maintained (including but not limited to; employees name, date of issue, item issued, employee signature, issue officer signature, etc).

Training shall be provided to all employees to ensure they know how to use and maintain their PPE. Training should include but not limited to: Cleaning of PPE, Hygiene, Correctly Putting PPE on, Inspection of PPE, Health Risks associated with the task, identifying when PPE is spent (i.e., reach saturation point/no longer functioning as it should) or broken, etc.

5.8.6.2 Specific PPE

The Contractor shall provide and ensure usage and compliance with the following minimum PPE requirements for site work:

SABS/EN/EC approved hard hats and hard hats with fixed side knobs for welding and grinding operations.

Approved and appropriate overalls.

Wearing of impact Safety Spectacles with side shields are compulsory on site and in workshops at all times. Prescription glasses shall comply with the same standard or cover impact safety spectacles is worn over them.

Front flip goggles to be used for gas cutting.

Double Eye-Protection

- Welding – Impact Spectacles & Welding Hood
- Grinding – Impact Spectacles & Full Face Visor
- Cutting – Impact Spectacles & Full Face Visor
- Reaming – Impact Spectacles & Full Face Visor

Specific PPE

- Welding – Spats/Apron/Yoke/Respirator (Metal frame) - Knee pads for welders in kneeling positions.
- Grinding – Spats and Apron
- Gas Cutting - Spats and Apron
- Boots / Shoes – “Farm” safety boots or equivalent.
- Gumboots – Steel cap toe.
- Ear-plugs (**SANS 11451** Approved)– Noise zones exceeding 85Db (Including grinding/compacting etc)
- Nuisance Dust – Dust Masks – 3M Standard
- Asbestos – FFP2 minimum
- Grit Blasting – Airline Hood
- Spray Painting – Airline Hood (Confined Spaces) /Canister type mask

Applicable Gloves to be worn for all Hand Operations

- Termination of cables – glass cutting gloves
- Using a Stanley knife - Glass cutting gloves
- Welding – Welding gloves etc.
- Gas/Argon – Cutting/Welding
- Gloves for artisans and helpers.
- Manual Handling – standard gloves.



- Symbolic signs (To comply with **SANS 11186**) indicating the use of PPE is placed at entrance to the construction site

Respiratory Protective Equipment (RPE) & Breathing Apparatus (BA):

- Only SABS/EN/EC rated equipment to be supplied.
- Shall be provided as per Risk Assessment requirements based on Time Weighted Averages (TWA) and Workplace Exposure Limits (WEL).
- Shall be provided as advised by an Occupational Hygienist, after they have considered the exposure risks on site.
- Where possible, after considering exposure risk and cost factors, the most effective RPE for the situation should be used.
- Specific training shall be provided to all employees who use the RPE/BA for the use and maintenance of RPE/BA. Training shall include but not be limited to: : Cleaning of RPE/BA, Disposal of RPE/BA items or filters/cartridges, Hygiene, Correctly Putting PPE on, Inspection of PPE, Health Risks associated with the task, Identifying when PPE is spent (i.e., reach saturation point/no longer functioning as it should) or broken, etc.

Issue, Replacement and Control of PPE

A dedicated person shall:

- Control the issue and replacement of equipment
- Keep an up-to-date register, with signatures of the recipients, as proof of having been issued with such equipment will be free charge

***PPE and Related Safety Requirements at to be issued for free by Contractor.**

5.8.7 Working on Live Electrical Equipment / Sub-Station

The Contractor may not allow any work on live electrical equipment!

5.8.8 Requirements when Off-loading Vehicles

The Contractor shall ensure that drivers and/or their assistants, who are required to assist with the off-loading of material and/or equipment, are provided with the following minimum Personal Protective Equipment: -

- Hard hat
- Safety boots / shoes
- Gloves
- Glasses
- High Visibility Reflective Vest

5.8.9 Elevated Work

The contractor shall implement and comply with Construction Regulation 10

The Contractor shall:

- Submit a fall protection and rescue plan to uMkhanyakude District Municipality Project Manager for approval, before any elevated work commence
- Parachute type harness with shock absorber and double lanyard to be provided for all elevated work
- Ensure that:



- All tools in elevated positions are attached to lanyards and be attached to either the person or structure
- Equipment in elevated positions is tied back to the structure
- No loose items in elevated positions. E.g., Bolts and nuts are in pouches, not paper boxes
- Overhead work allowed only if Area below is barricaded in accordance with uMkhanyakude District Municipality barricading requirements
- Competent riggers place lifelines on register and check it daily before use and records findings in the said register

Note: Employees shall be attached by at least one lanyard of the safety harness/climbing harness at all times when conducting elevated work.

5.8.9.1 Structures

The Contractor shall implement and comply with Construction Regulation 5.

5.8.9.2 Barricading requirements

The contractor shall implement and comply with OH&S Act – General Safety Regulation 13 (I)

The Contractor shall ensure that:

- All openings and edges are barricaded with solid barricading to withstand an impact of at least 100kg
- Only solid barricading covered with Orange “Snow Netting” and or uMkhanyakude District Municipality approved equivalent barricading is allowed to be used as barricade
- Solid barriers to prevent persons falling into them shall protect openings in floors, stairwells, staircases, open-sided buildings and any structure in the course of erection, where dangerous openings exist
- Contractors shall pre-plan the delivery of floor grating, stair treads, landings and handrails to ensure safe access and protection for persons working on structures
- Barricading is tagged, placed on register, maintained and inspected daily – The owner of the barricade’s name and mobile number shall appear on the tag

All handrails and fencing shall comply with uMkhanyakude District Municipality Standards. They are provided around all holes or openings to prevent any person being injured as a result of a fall. A Solid framework with Plastic Barricading Netting attached to it is required.

Where it is impracticable to provide fixed guard railing, effective removable barriers are provided at all unguarded openings in guard railing or floors and is maintained in position at all times until the hazard no longer applies.

Note: Danger tape will not be accepted as barricading!

5.8.10 Working in Existing Operations

Work carried out such that no interference is caused to other construction work being carried out on the Site and no claims for delays are brought about by the nature of the work is approved by uMkhanyakude District Municipality Project Manager.

Any work which requires section of the Plant to be taken out of operation with resultant interruption to production and/or other construction activities is carried out in the absolute minimum of time and be on the basis of the Contractor working around the clock (**within legal parameters**) for the duration of such work. The times when work of this nature can be carried out are as arranged with uMkhanyakude District Municipality Representative.



5.8.11 Permit to Work

The Principal Contractor's appointed CHSO shall be the Permit to Work issue and control officer on site.

- Permit to Work shall only be valid for One (1) shift.
- Permit to Work is not transferable from team to team or from shift to shift.
- Permit to Work shall list specific condition and hazards involving the specific task.
- Permit to Work issue and control officer shall inspect and verify conditions on site before issuing and closing out the Permit to Work. Random inspections during the shift will be required to ensure continued compliance with the Permit to Work requirements.

5.8.12 Lock-out Procedures

In operating areas lock out procedures shall follow uMkhanyakude District Municipality procedures. The Contractor is to co-ordinate with uMkhanyakude District Municipality Representative.

An entirely separate set of procedures cover the requirements for lockout, commissioning, start-up and hand over of the completed works.

A Safety Clearance Certificate is necessary for commissioning of all machinery and equipment, together with a Permit to Work and Lock-out Procedure.

To ensure the safety of persons working in operating plant areas, the Contractors' Safety Co-coordinator is responsible to ensure Compliance with:

- Lock-out procedure
- Instructing all workmen concerned in its application and implementation.
- Instructing the appointed Contractors Supervisors in the issue of applicable permits
- Daily checking of permits
- Distributing information and communicating any other permit system required, for example, for work to be carried out on HT equipment, roof work, excavation, demolition, hazardous areas etc.

The Contractor is required, but not limited, to comply with the lockout procedures in the following circumstances:

- Executing tie-ins to existing Operating plant
- Working near live equipment
- Start-up and commissioning of electrical equipment and electrically driven machinery
- Working on live pipelines, confined spaces and hydraulic equipment

Electrical/Mechanical Lock-out Procedure

Appointment of a competent person and compliance with OH&S Act – Regulations regarding a Certificate of competency

Purpose:- To ensure that all plant and equipment being put into operation is done so in an orderly manner to safeguard all personnel involved in the commissioning process.

Procedure

- The Contractors 16(2) assignee shall nominate and appoint a competent person as the responsible person for energising and isolating equipment in response to requests from holders of work permits
- uMkhanyakude District Municipality Project Manager shall nominate and appoint a competent person for the duty of managing the "Permit to work" system which shall entail the stages of issue, revocation and completion
- All electrical control panels are to be locked by the Contractors' appointed person with padlocks having two keys for the series
- The Contractor shall provide these padlocks
- The Construction Manager and the Contractors' appointed person would be the sole custodian of these keys
- The Contractor shall provide a sufficient number of padlocks; each with a unique key, for his artisans who is requesting permits for working on equipment
- These padlocks and keys are numbered for the permit holder's identification
- The Contractor shall ensure that multi locks are available for his staff to cater for multiple lockouts
- The Contractors Construction Manager shall provide a sufficient number of tags that are to be attached to the padlocks at the point of isolation by the person working on that piece of equipment
- These tags shall indicate that the equipment is locked out and bears the name and permit number of the holder.
- Permit to work books shall contain three copies, first copy for retention by the person carrying out the work on equipment, second copy to be in the hands of the Contractors responsible person and a fixed third copy for the records
- Permit holders are to enter the names of their assistants in the register and after briefing them on the nature of the work and the dangers involved, they are to sign the register to this effect in the spaces provided

For the first stage of commissioning, involving rotation testing of electric motors, the Contractors responsible person shall:

- Energise the motor on receipt of a permit from the electrical technician
- Isolate and lock out for adjustments to be made
- Re-energise for further testing, and
- Isolate and lock out on completion

The electrical technician shall maintain radio contact with his assistant at the local isolator to ensure that no persons are in the immediate vicinity of the equipment to be test-run.

After making adjustments he shall again test-run the unit and, if correct, sign off the permit and remove his tag and padlock

The second stage involves cold commissioning of the equipment, and the Contractors responsible person shall:

- Verify that it is the correct equipment as specified on the permit
- Isolate the piece of equipment and ensure that it is de-energised
- Attach his lock and tag to a multiple locking device
- The permit holder, having witnessed the isolation, shall



- Physically test that the equipment is correctly isolated.
- Sign the permit to this effect.
- Inform his workers of the nature of the work and hazards involved.
- Complete and sign the Workers Register and attach to the permit.
- Attach his lock and tag to the multiple locking device, and
- Hand the second copy of the permit and worker's register to the Contractors responsible person
- After completion of the work, the permit holder shall remove all tools and equipment and leave the area in a neat and tidy condition.
- The permit holder shall sign all copies of the permit and workers register to the effect that his work is complete and remove his tag and lock from the isolator.
- If work continues over more than one shift, a worker shall remove his tag and lock at the end of the shift.
- If another person is to work on the machine, he shall follow the same lockout procedure.
- If a permit holder does not remove his lock after the shift, and does not report to work the following day, the construction manager is the only person authorised to remove his lock and energise the equipment after ensuring that it is safe to do so.
- At the first stage of cold commissioning uMkhanyakude District Municipality commissioning team takes over control of the plant and shall follow a similar lock-out procedure but shall utilise their own plant documentation, padlocks and tagging system.

Note:

- Fire Extinguishers are available at all points of grinding, cutting and or welding!
- Welding earth clamps to be attached to the workface only.
- The Contractor shall provide shield and fire blankets for all welding activities.

5.8.13 Alterations to Existing Facilities

All necessary alterations to existing details and connections between new and existing details is carried out by the Contractor, including the making good of existing details on the completion of the work.

Where openings are left, due to the removal of access platforms, handrails, or steel work or where new details have not been installed, the Contractor shall fabricate and install temporary solid handrails until the permanent structure is erected.

All temporary connections and the like are carried out in conformance with all regulations to ensure safe operation and passageway for all personnel.

Protection of Equipment

The Contractor is responsible for covering up any equipment placed in danger of damage from his operation, for example cables or other combustible equipment, with a flame-proof material before Oxy-cutting, grinding and welding.

The Contractor shall ensure that all equipment is properly protected against damage or deterioration during all phases of construction, in accordance with equipment suppliers' recommendations.

5.8.14 Work in Operating Areas

When the Contractor is working in close proximity to operating cranes, roads, railways or other equipment and a safety hazard exists, the Contractor shall:

- a) Provide safety watchers as necessary or as directed by uMkhanyakude District Municipality Representative
- b) Provide, erect and maintain all the required barriers, flags, and wheel stops, buffer stops flashing lights or other safety equipment to enable his operations to proceed in a manner which satisfies uMkhanyakude District Municipality Safety Regulations
- c) Remove all such protective devices once the hazard has been removed or on completion of the work.

The Contractor shall at all times keep defined access ways clear of objects or obstructions which may endanger the health, safety or welfare of personnel or cause damage to equipment or plant.

The Contractor shall provide any temporary protective shielding required for the protection of construction activities from nearby operations, at his expense.

The relevant permits are obtained prior to undertaking any work. In addition to this, the Contractor shall advise uMkhanyakude District Municipality Representative immediately prior to commencing work in the area.

Where the work is carried out in hazardous zones or where there is a danger of producing combustion in adjacent flammable materials, the Contractor shall provide a dedicated fire watch for job site control, including management and implementation of preventative action.

Remember for all work done in live plant Contractor's supervisors shall obtain a permit to work from uMkhanyakude District Municipality's operational control with a uMkhanyakude District Municipality Representative present.

5.8.15 uMkhanyakude District Municipality Operations

Access to uMkhanyakude District Municipality operations and operating plant and facilities is restricted.

All access to the construction site is through defined access roads and all personnel, Contractors, deliveries, visitors and the like shall use only these defined access routes.

Unauthorised personnel found in restricted areas of the Plant will be removed from the site.

The Contractor shall provide watchers for activities adjacent to operating plant.

Personnel are required to move out of the Construction areas during periods when the Overhead Cranes is moving over the area.

Operations shall cause interruption to or provide access for the construction activities, which is further, explained at the Site Meeting.

All tools and equipment are kept in first-class condition. Examine all tools for faults before use and report all unsafe tools, equipment or conditions to the relevant Supervisor immediately.

5.8.16 Piling Operations

All piling machinery, core/dynamic drilling machinery and an attachments shall comply with legal requirements and a pre inspection is done by the Contractors operational manager and it shall be reviewed by uMkhanyakude District Municipality representative prior commence doing any piling, soil test, dynamic compaction or ground improvement. Each piece of equipment shall have a valid operator's competency certificate, latest inspection log registers a copy steel cables certificate. A copy of risk assessments and safe operating procedures for each specific operation. And prove that every employee has been trained



to risk assessment and safe operating procedure. Special care is taken when working in the vicinity of pile driving equipment.

The Area shall be properly barricaded according to uMkhanyakude District Municipality Standards

5.8.17 Plant Isolation Procedures

A strict isolation & permit system involving the use of Danger and Out-of-Service Tags and, in some circumstances, locks, applies on uMkhanyakude District Municipality premises.

5.8.18 Working of Moving Equipment

Never work on a crane, conveyor table or other machinery without securing permission.

Work shall not be started until the Contractors' personnel have placed Danger Tags and control access.

5.8.19 Compressed Air

Compressed air shall **NOT** be used for any purpose other than that for which it is provided.

Do not use compressed air to remove dust from clothing.

NEVER direct a stream of compressed air at your body or that of any other person - it may enter the body and cause serious injury or death.

Locking wires or other suitable approved devices are to be used to prevent accidental uncoupling of compressed air hoses

Do not disconnect air hoses until sure that the supply valve is closed and the pressure in the hose has been released.

Hoses to be orderly routed and elevated, if required, to prevent tripping hazards.

5.8.20 Oxygen, Acetylene and LPG Cylinders

The contractor shall implement and comply with OH&S Act - General Safety Regulation 9 and SANS 11548

Contractors shall establish satisfactory storage areas (Fenced, shaded, approved surface and all necessary signs posted) for oxygen, acetylene and LPG. Gas cylinders. Oxygen, acetylene and LPG cylinders is stored (separate) and in an upright position.

When moving cylinders from place to place, keep them from being knocked over or falling. Before moving a cylinder without a suitable truck or trolley, close the cylinder valve and remove the regulator. Only use special approved cylinder crates/cradles. Do not transport cylinders with magnet cranes. Never use cylinders as rollers, even if they are marked 'empty'.

Make sure that cylinders do not come in contact with electrical circuits, e.g., welding leads. Never strike an arc on a cylinder.

Do not store cylinders in hot places. If possible, do not use cylinders in hot places. Don't let cylinders get hot; avoid standing them in hot sunlight if possible. Before you begin a job in a hot area check to see that your cylinders are protected from overheating. Keep your cylinders far enough away from cutting work to stop sparks or hot slag reaching them. If it is necessary to work where cylinders become hot or warm, move them to a cool area as soon as you finish the job.

As with compressed air use oxygen **only** for the purpose for which it is provided. Do not use oxygen in pneumatic tools or tyres as an explosion may occur.

Oxygen cylinders should be stored at least 5m away from other flammable gas cylinders.

Flashback arrestors to be fitted on torch and cylinders.

Empty cylinders to be marked as such and removed daily to approved storage areas. Cylinders shall only be allowed on site in an approved trolley, properly secured and with a 1,5KG Dry powder fire extinguisher attached to the trolley.

Storage of Gas Cylinders

- Storage areas should whenever possible be well clear of buildings
- A protective covering is provided
- Adequate ventilation is provided
- Storage areas is kept free from all combustible materials, no other materials are stored in cylinder enclosure
- Full cylinders are kept apart from empty cylinders so that it shall not be necessary to open valves to check whether cylinders are empty or full. Mark empty cylinders clearly and store in space provided
- Cylinders shall always stand upright; special stands are used for cylinders and the cylinders is chained separately in an upright position
- Cylinders is stored in rows with aisles in-between for easy removal in event of fire
- For security and ventilation purposes a wire mesh fence should surround the storage area. Keep the enclosure locked
- All danger signs are prominently displayed at storage area, e.g.:
 - No Smoking
 - No naked flames
- Adequate firefighting equipment is available
- Oxygen and acetylene should be stored separately
 - The storage should be clearly marked
 - Oxygen - Full Oxygen - Empty
 - Acetylene - Full Acetylene - Empty
- Flammable and oxidising gasses shall not be stored together, greases and oils shall never be allowed to come in contact with Oxygen
- If electrical lighting is required, it should be of an approved type and comply with SANS 10108

5.8.21 Recognized Walkways

When walking through the Site or to personal work area use recognised thoroughfare. Don't take short cuts.

5.8.22 Commissioning of New Installation

The Contractor shall implement and comply with OH&S Act – Electrical Installation, Driven Machinery, Electrical Machinery & General Machinery Regulations.

Notice boards are erected clearly stating which items of plant have been made 'LIVE'. The information on these notice boards is for general guidance to persons working about the area and warns of increased hazards. As soon as any item of plant is notified as being 'LIVE' commissioning procedures shall apply.

5.8.23 Explosive powered tools

The Contractor shall implement and comply with Construction Regulation 19.

Explosive powered tools may only be used when prior written permission is granted by uMkhanyakude District Municipality Project Manager.

5.8.24 Welding, Cutting, Grinding and Heating

The Contractor shall implement and comply with OH&S Act - General Health and Safety Regulation 9.

Contractors shall instruct employees in the safe use of welding equipment. Cutting and welding work is carried out in accordance with **General Safety Regulation 9**.

Non-combustible or flameproof shields to protect employees from direct rays and air-borne particles shall shield arc welding, cutting and grinding operations.

Electrode holders or welding guns is maintained in good order, and when they are to be left unattended, the electrodes are removed, and the holders is placed or protected so that they cannot make electrical contact with employees or conducting objects.

All arc-welding cables are properly maintained and completely insulated. There is no repairs or splices within 3 meters of the electrode holders, except where splices are insulated equal to the cable. Defective cable is repaired or replaced. The earth cable is connected to the work place.

Fuel gas hose and oxygen hose is of an approved type, be easily distinguishable and shall not be interchangeable. Hoses are inspected at the beginning of each day and is repaired or replaced if defective.

Hot Work

- Hot work permit to be obtained before job starts
- Falling sparks and/or Hot cuttings to be contained
- Fire Blankets and Fire Extinguishers is at hand
- Ensure not to carry out any Hot work, Cutting and/or Grinding in the vicinity of Flammable Liquids
- Protect Rubber lined Vessels / Tanks etc
- Combustible Floors is wetted down, covered with Damp sand or Fire proof sheets
- All wall and floor openings covered
- Containers / Pipes purged of Flammable vapours
- Fire watch is provided
- Area to be inspected after Hot work has been completed
- Fire watch to stay in place for at least 30 minutes after operation
- Warn all Employees working under hot work process

Ensure adequate fire extinguishers, where appropriate, Mobile Water supply with Water Spray / Pressure available, at all times during Hot work Operation.

Harmful gases are given off when doing certain types of welding work and the Contractor shall provide a breathing apparatus when welding, cutting or heating:

- Zinc, lead, cadmium, mercury, or beryllium bearing based or coated materials in enclosed spaces
- Stainless steel with inert-gas equipment
- In confined spaces



- Galvanised steel
- Where an unusual condition can cause an unsafe accumulation of contaminants

Proper protective equipment to prevent exposure of personnel is provided.

No welding or cutting is undertaken where hot metal or sparks can fall onto walkways, work areas, cable ladders, electrical equipment, etc. Before welding or cutting is started, fire retardant blankets are placed to arrest such hot metal or sparks. Particular attention is taken when working above cables that are not adequately covered.

Use an approved type flint gun for lighting of torches. Do not use matches, rope wicks or other smouldering materials.

Hoses is deflated before cutting torches are cleaned and nozzles not robbed against gloves

During welding operations, the earth lead is to be attached to the work area and never such that the earth is established through equipment bearings or through clearance gaps of any sort.

Welders and other people executing hot work shall not wear any jewellery and or carry cigarette lighters on their person.

All welding machines are earthed, receive power through an approved earth leakage and fitted with an approved voltage reducer. A certificate to be kept on register.

5.8.25 Electrical Equipment

The Contractor shall implement and comply with Construction Regulation 24 and OH&S Act - Electrical Installation Regulations

Electrical installations and machinery on construction

The Contractor shall ensure that:

- All electrical installations carried out on the site are in accordance with the Electrical Installation Regulations. For permanent or temporary installation, as appropriate. In addition, electrical installations shall comply with uMkhanyakude District Municipality Electrical Standard Specification
- Connections are not made to any power supply without the prior written approval of uMkhanyakude District Municipality Representative and where an isolation is required that an isolation permit has been obtained and the isolation procedure associated to the permit has been followed correctly
- All electrical installations are inspected by uMkhanyakude District Municipality Electrical Representative (or his nominee) to ensure that the installation complies with the statutory regulations applicable to the site and uMkhanyakude District Municipality Safety Regulations
- All electrical machines and appliances provided by the Contractor for his own use on the site are in a serviceable condition
- Power tools used on the site are protected by residual current devices approved by uMkhanyakude District Municipality and are double insulated
- All extension cords, portable tools and electrical plant supplied at a voltage above 32 volts are inspected tested and tagged by a licensed electrician at regular monthly intervals. Details of inspections and tests is kept in logbooks available for inspection by uMkhanyakude District Municipality Representative or any other authorised officer of uMkhanyakude District Municipality
- Where natural lighting is inadequate, artificial lighting is to be provided in all work areas, access ways and for rescue equipment. Compliance with OH&S Act - Environmental Regulation 3 and Annexure E to the regulations



- Portable lights have adequate stability and are fitted with a mechanical guard to protect the lamp
- Temporary festoon lighting is of the 'double insulated' type and is supported at least 2.5m above the floor, if possible
- Hand lamps is of the 'all insulated' type
- All temporary light fittings are supplied from more than one final sub-circuit, with the supply from a residual current device, extra low voltage source or an isolating transformer

Any installations deemed unsatisfactory by uMkhanyakude District Municipality Representative should be removed by the Contractor at his expense.

The Contractor shall obtain approval from uMkhanyakude District Municipality Representative before any of his employees or sub-Contractors commence work within three (3) meters of high-tension wires, or where there is a possibility of equipment coming close to and/or touching a power source and shall provide suitable protective insulating barriers. For the erection of scaffolding, the distance is five (5) meters.

Only authorised persons may enter electrical contractor houses, motor rooms, switch rooms, control rooms or cable ducts. Should the Contractor require entering such places to carry out work, he shall first obtain permission from uMkhanyakude District Municipality Representative and obtain a valid permit to work.

The Contractors' employees required to enter such electrical spaces "authorised persons", with the names entered in uMkhanyakude District Municipality Authorised Persons Register, after receiving approval from uMkhanyakude District Municipality Electrical Supervisor, or they are accompanied by an authorised person who shall supervise the placement of Danger Tags and Out-of-Service Tags, as well as electrical isolation permit.

Before commencing work on the site, the Contractor shall provide the following information to uMkhanyakude District Municipality Representative:

- Number of electrical machines and appliances to be placed in service on the site
- Nameplate data of each electrical machine and appliance
- Approximate total time the machines and appliances are in service to complete the Works
- The Contractor is responsible for the effective protection of his own electrical equipment from the weather and from possible mechanical damage

The Contractor is required to inspect electrical equipment as follows:

- Supply cabling distribution boards, fixed lighting and portable appliances on a monthly basis
- Extension leads, welding machines, compressors, pumps and hand portable tools on a weekly basis

Such inspection(s) are to be performed by an appropriately qualified electrician and a report submitted to uMkhanyakude District Municipality Representative, in accordance with the following:

Frequency of Testing:

The Contractor shall test and tag all the Contractors' and subcontractors' electrical equipment and leads on a monthly basis, as follows:

Colour Code:

Contractors shall ensure the tagging and colour coding of all tools and equipment.

Colour code a different colour for each month as follows:

January - Red

July - Blue

February - Blue	August - Green
March - Orange	September - Red
April - Green	October - Yellow
May - White	November - Orange
June - Yellow	December - White

Details of the Tag:

The tag is a plastic self-adhesive tag unable to be re-used, as approved by the Construction Manager, and is capable of being marked with the following information:

- Test date
- Inspection number
- Testing agent
- Owner
- Plant number
- Type of equipment
- Record Book

An up-to-date record book is maintained at all times and be available for inspection by uMkhanyakude District Municipality Representative.

The record book shall contain full details, as identified in the tag, and shall list, in addition, the following:

- License number and signature of the electrician carrying out the test
- Comments on the results of the test and details of any repair work

Note: All electrical appliances shall be fed through an approved and tested earth leakage device.

5.8.27 Working at Heights on platforms, scaffolding and in cradles.

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 6 & Construction Regulation 10.

Where personnel are required to work in any area not guarded for fall protection, which has a fall risk, either above or below ground, permanent fall protection equipment is utilised by the personnel. Fall protection includes:

- Safety harnesses and double lanyards (with the correct hook attached to the lanyard, e.g., Pylon type hook for scaffolding, or lifeline hook for lifelines, etc)
- Approved lifelines, be it Static Life Lines, Retractable Lifelines, etc (installed and certified by a competent and suitably qualified person as per applicable SAQA unit standards). Lifelines shall be sufficient for the work carried out and shall consider the hazards of the task and numbers of employees to be attached at any given time.
- Other approved means.
- All harnesses shall comply with **SABS/EN/EC** Standards and shall be in a good state as inspected using a comprehensive inspection checklist, shall be "in-date" as per manufacturing guideline.

This requirement also applies to Riggers erecting steelwork and Scaffolders erecting scaffolding. Riggers shall at all times be permanently connected to adjacent steelwork through fall protection equipment. (Double lanyards to be used)



All persons working in a fall risk position, be it from scaffolding, formwork/false work, support work, roof work, deep excavations, etc shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998). The supervisor of the work relating to the fall risk area shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 & 229995). A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that is being conducted on site) shall be available at all times on site. The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999) that is able to take charge and conduct a rescue if required.

Note: To be implemented in conjunction with the requirements for Elevated Work and in conjunction with the Fall Protection Plan.

5.8.28 Work Platforms

The Contractor shall ensure that all working platforms, be they permanent, temporary or portable, , is fully decked, including toe boards, and fully hand railed. Where it is not practical to have handrails or there is a need to work outside handrails, the use of an approved safety harness, with lanyard attached to a secure anchorage is required.

5.8.29 Suspended scaffold Platform

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 13F

Suspended platforms may only be used on site with prior written approval from uMkhanyakude District Municipality Construction Manager.

A Contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

5.8.30 Crane Cradle – (Man Cages)

The contractor shall implement and comply with OH&S Act - Driven Machinery Regulation 2015, section 18(8), General Safety Regulation 13C, and Lift Escalator and Passenger Conveyer Regulations.

- The Contractor shall ensure that every Man Cage or similar device is securely suspended and is constructed in such a manner so as to prevent any occupant from falling there from
- The Contractor shall ensure that an inspection is carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out on a daily basis prior to use."

No user of machinery shall require or permit any person to be moved or supported by means of a lifting machine fitted with a cradle (man-cage) unless approved for that purpose by an Inspector from the local Department of Labour.

Should the use of such equipment be necessary for reaching otherwise inaccessible places, the Contractor shall advise the Safety Co-ordinator of the equipment required and produce a certificate of approval from the Chief Inspector from the local Department of Labour.

Cradle shall comply with the specifications of Health & Safety Act and the design engineer and approved By the Department of labour and review by uMkhanyakude District Municipality Construction Manager on site.

uMkhanyakude District Municipality Representative is advised **well beforehand** of the intention to use such equipment on site so that the Representative can make arrangements for inspection.

uMkhanyakude District Municipality Construction Manager shall approve any cradle before use.

The contractor shall:

- Provide a copy the approve design engineers drawing for the Department of Labour
- Each employee within the cradle shall wear approved safety harnesses and attached by a lifeline/sling to an anchorage point, which does not form part of the cradle.
- Ensure that personnel in the cradle shall have their feet on the floor at all times, and remain within the cradle.
- Ensure that each employee within the cradle shall wear approved safety harnesses and attached by a lifeline/sling to an anchorage point, which does not form part of the cradle.
- Provide appropriate means of communication is provided for people in the cradle.
- Provide copies cradle specifications and load test certificate
- Each cage is fitted with an information plate to indicate the maximum weight and number of persons to be lifted.
- Cradles and cranes to be used, is inspected every time before use and the findings recorded.
- Provide and ensure taglines are used to stabilise the cradle.
- Provide copies of welding X-Rays.

5.8.31 Scaffolding

The contractor shall implement and comply with OH&S Act - SANS 10085, General Safety Regulation 1986: section 13D to 13G and Construction Regulation 2014: section 16.

Scaffolding may only be erected, dismantled and altered under the supervision of the Contractors competent appointed person (Approved training certificate to be submitted).

The scaffold supervisor and scaffold inspector may not be the same person.

The rule on scaffolding is it shall be 100% compliant

Guard rails (minimum of 950mm above the working platform and any gap between the top rail and the intermediate rail should not exceed 470mm) and toe boards are provided on all outer edges and ends of all scaffolding where a person or an object can fall.

Ladders to be staggered every 3.0m inside scaffold frame with safe landing platform and a trap door fitted on the working platform.

A Tagging scaffolding management system is used by the Contractor to ensure that scaffolding erected on Site complies with the provisions of Legal, SANS and uMkhanyakude District Municipality rules. Contractors shall use SGB and or similar type uMkhanyakude District Municipality approved tags and shall use a three tag system (Green, Orange and Red):

- Green tag = Fully Compliant with no openings and no safety Harness is required.



- Orange Tag = scaffolding is as compliant as possible but opening exist to allow for work – Double Lanyard Safety Harness shall be worn and used as per Work at Height US229998 training.
- Red Tag = Scaffolding not safe for use/scaffolding is being erected or dismantled by the scaffolding erectors.

Contractors' qualified, competent and appointed scaffold inspectors (Training certificate to be submitted for review and approval by uMkhanyakude District Municipality's Health and Safety Agent), shall carry out inspections of their scaffolding whenever the scaffolding has been modified, damaged or altered in any manner or form, and otherwise at least every 7 days during the period that the scaffolding is on site and after inclement weather, to be captured on register and the tag.

uMkhanyakude District Municipality's Representative will carry out random compliance audits. Such activities shall in no way relieve the Contractor of his responsibility for ensuring that his scaffolding is safe for use.

Where complex/technical and/or unusual scaffolding is required in hazardous locations, liaison with uMkhanyakude District Municipality's Health and Safety Agent is required, before undertaking such work, because a competent Designer CR12 may be required to be appointed in writing, who is a structural engineer with relative experience, and who shall design, inspect and sign off on the scaffolding before it may be used.

The Contractor shall provide a scaffolding procedure detailing how the Contractor shall manage access scaffolding and the following shall be included in the procedure:

- Managing of the scaffolding requests
- Certification of the scaffold to be handed over
- Inspection of the scaffolding
- Documentation in triplicate booklet:
 - Scaffold Request
 - Scaffold Handover certificate
 - Scaffold Inspection Register
 - Scaffold Site Instruction (for altering scaffolding)
 - Scaffold record of all scaffolding on site and dismantlement's
- Overall management of the ordering of material, storage on site and laydown areas
- Staffing plan including CV's certificates and appointments.
- Scaffold shall be declared unsafe for use during rain and irrespective of recorded millimeters of rain on a given day until it is inspected and declared safe for use by the competent Scaffold Inspector

Qualifications/ training:

Construction Regulations 16. Scaffolding and SANS 10085

Each person involved in the erecting, disassembling, moving, or repairing a scaffold shall be under the direction of a qualified erector.

A competent person shall inspect the scaffold daily prior to use.

Only trained personnel shall use the scaffold.

Documentation is to be in place for such training.

No one is to perform any scaffolding tasks without receiving scaffolding training to do so.

All persons working on scaffolding shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998 with IWH accreditation on the certificate).

The Scaffolding Supervisor shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 & 229995 with IWH accreditation on the certificate).



A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that shall be being conducted on site) shall be available at all times on site.

The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999 with IWH accreditation on the certificate) that shall be able to take charge and conduct a rescue if required.

Should a Scaffold be designed by an engineer, the engineer shall be:

- Qualified and competent in scaffold design
- Registered with the Engineering Council of South Africa (ECSA)
- Appointed in writing.
- Inspect and approved the built scaffolding in accordance with his/her approved design.

Special Scaffolds shall be designed by a competent and qualified engineer who is appointed as the Temporary Works Designer CR12(1).

Scaffolding Designations:

- Scaffolding Erectors:
 - Scaffolding Erectors cannot be Scaffolding Inspectors, Forman or Supervisors
- Scaffolding Foreman:
 - Scaffolding Forman cannot be Scaffolding Inspectors or Scaffolding Supervisor.
- Scaffolding Inspectors:
 - Scaffolding Inspectors cannot be Scaffolding Supervisors, Forman and Scaffolding Erectors.
- Scaffolding Supervisor:
 - The Contractor Shall appoint one Scaffolding Supervisor to manage all scaffolding on site.
 - The Scaffolding Supervisor shall be responsible for scaffolding compliance on the entire site and shall manage the scaffolding teams to ensure compliance is maintained.

The Scaffolding Supervisor shall report directly to the Contractors Construction Manager.

Inspections / Tags:

The Contractor shall adopt a Three (3) Tag System for all scaffolding on site:

- Green Tag: 100% compliant to SANS10085 and is "SAFE TO USE" without Double Lanyard Safety Harnesses.
- Orange Tag: Not Fully Compliant to SANS10085 due to construction constraints and the use of Double Lanyard Safety Harnesses are mandatory.
- Red Tag: Not Safe to Use, Scaffolding being built or Scaffolding being dismantled. Only the Scaffolding Erectors are permitted to climb the scaffolding (Double Lanyard Safety Harnesses are mandatory).

Tags shall comply with the SGB standards.

Each scaffold is to be inspected:

- Every Seven (7) Days
- After Inclement Weather or windstorms or any other change in condition that could affect the safety and stability of the scaffolding.
- After an incident involving the scaffolding.
- After any changes (not matter how small) are made to the scaffolding.



- Daily prior to use by a competent person.

The inspections shall be documented in writing and records kept on site. The Scaffolding Tag shall be updated on the back indicating the inspectors name, date of inspection and signature.

Additional Requirements:

Erect scaffolds on firm and level foundations. Scaffold base jacks/legs shall be placed on firm footing and secured from movement or tipping. Scrap softwood lumber, concrete block or bricks are not used to stabilize the footings.

Provide ladders or stairs to get on and off scaffolds and work platforms safely.

Keep scaffolds and work platforms free of debris. Keep tools and materials as neat as possible on scaffolds and platforms.

When the scaffold's height is four times the base of its width, the scaffold shall be secured to the structure, or a buttress built. Follow SANS 10085 and manufacturers recommendations for frequency of tie off points.

Do not move rolling scaffolds with workers aboard.

Planking:

- Fully plank or use manufactured decking to make a full work platform on scaffolds. The decking and/or scaffold planks shall be scaffold grade and not have any visible defects. Extend planks or decking material at least 15 centimeters (5.9 inches) over the edge or cleat them to prevent movement.

Scaffold Guardrails:

- Guard scaffold platforms with a standard knee and handrail ledger.
- The top rail is to be at 100-115 centimeters (39.4-45.3 inches) above the work platform or planking with a mid-rail half the height of the top rail.
- Nobody shall be permitted to stand on the hand or knee rail ledgers of the Scaffolding (unless the person is erecting or dismantling the scaffolding).
- Toe-boards are always required, extra height toe boards (brick guards) shall be placed where work is above entranceways and at other times if others may pass beneath.

Stair Scaffolds:

- 'System' scaffold stairs shall be erected as early as possible during the building construction to facilitate safe access to all working levels once the steel erector has released the floor/level to other contractors on site. Scaffold stairs shall remain in place until the permanent stairs are constructed and made available for use by other contractors on site.
- Access scaffolds shall be constructed in accordance with manufacturer's instructions by trained and qualified workers under the direction of a competent person.
- Access scaffolds shall be inspected daily by a competent person at the beginning of each shift, and as needed throughout the day. The competent person shall date and initial a scaffold tag and place the tag at the entrance to the access scaffold.
- Stairs used during winter months shall be enclosed to prevent ice and snow from creating slippery conditions. Temporary lighting in accordance with OHS Act requirements shall be installed on all enclosed access scaffolds.

The Contractor shall only use SANS approved scaffolding material and shall tag and remove all damaged, bent and rusted scaffolding material from site.



Instruction: No Assembled Scaffold Towers / Platforms / Mobile Scaffold Shall be Re-Positioned as a Unit by Any form of Lifting Equipment, i.e. Tower Crane or Mobile Crane etc. The Contractor Shall Dis-Assemble the Scaffold Completely and Re-Assemble as per SANS 10085. Failure to Comply with this Instruction Shall Result in Serious Sanctions Imposed on the Contractor.

Mobile Scaffolding:

Mobile Scaffolding shall be built, inspected and tagged in accordance with SANS10085 and the fixed scaffolding requirements in section 40 of this Health and Safety Specification.

Additional Mobile Scaffolding Requirements:

- All 4 wheels shall be locked out at all times when the tower is not being moved.
- Mobile Scaffolding Towers shall be moved with a minimum of 4 people (one on each corner).
- All materials and persons shall be removed from the Mobile Scaffolding Towers before it is moved.
- A spotter shall be in place to ensure the Mobile Scaffolding Towers does not strike any overhead service or part of the building.
- Nobody shall be permitted to stand on the hand or knee rail ledgers of the Mobile Scaffolding (unless the person is erecting or dismantling the scaffolding).
- Outriggers shall be installed on Mobile Scaffolding Towers where Mobile Tower Height exceeds 3 times the width of the narrowest part of the base of the scaffolding.

The Contractor shall only use SANS approved scaffolding material and shall tag and remove all damaged, bent and rusted scaffolding material from site.

Instruction: No Assembled Scaffold Towers / Platforms / Mobile Scaffold Shall be Re-Positioned as a Unit by Any form of Lifting Equipment, i.e. Tower Crane or Mobile Crane etc. The Contractor Shall Dis-Assemble the Scaffold Completely and Re-Assemble as per SANS 10085. Failure to Comply with this Instruction Shall Result in Serious Sanctions Imposed to the Contractor.

Builders Trestles:

The Contractor shall ensure that no builders trestles are brought on to site of any kind. The use of Builders Trestles is prohibited on all uMkhanyakude District Municipality sites.

General:

A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that is being conducted on site) shall be available at all times on site.

The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999) that is able to take charge and conduct a rescue if required.

5.8.32 Formwork/False Work, Temporary Works and Support Work

The Contractor shall implement and comply with Construction Regulation 12. The competent temporary works designer shall be to be appointed in terms of CR12(1). Furthermore, all formwork/ false work/ temporary works and Support Work shall be designed, inspected and approved by an appointed and competent Temporary Works Designer CR12(1) who shall be a professionally registered structural engineer with the Engineering Council of South Africa (ECSA) and shall have relevant experience with the scope of work being undertaken.



Temporary Works Designer CR12(1):

The Temporary Works Designer CR12(1) appointment may be split in to:

1. Design Only, and
2. Inspect and Approve only.

For both types of Temporary Works Designers CR12(1) appointment, as mentioned above in point 1 and 2, the requirement shall be the same, i.e., the person shall be a professionally registered structural engineer with the Engineering Council of South Africa (ECSA) and shall have relevant experience with the scope of work being undertaken.

The Contractor shall submit the Temporary Works Designer CR12(1) curriculum vitae (CV) along with certificates of competency, including the valid ECSA certificate, to uMkhanyakude District Municipality's H&S Agent and uMkhanyakude District Municipality's Engineer for review and approval. Only once the Temporary Works Designer CR12(1) Appointment has complied with this specification and has been formally approved, in writing, by the Clients Engineer shall the Temporary Works Designer CR12(1) be able to act in this capacity on the project.

Temporary Works Supervisor CR12(2):

The contractor shall appoint a Temporary Works Supervisor CR12(2) to supervise the formwork/ falsework/ temporary works and support works on the project. The Temporary Works Designer CR12(1) shall approve, in writing, the competency of the Temporary Works Supervisor CR12(2) before the Temporary Works Supervisor CR12(2) may act in this capacity on site.

General:

All formwork/ falsework/ temporary works and support work shall be: Tagged, Numbered, Placed on a register, and Inspected daily and before use.

All persons working on formwork/ falsework/ temporary works and support work shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998 with IWH accreditation on the certificate).

The Temporary Works Supervisor CR12(2) of the formwork/falsework/ temporary works and support work shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 & 229995 with IWH accreditation on the certificate).

A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that shall be being conducted on site) shall be available at all times on site.

The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999 with IWH accreditation on the certificate) that shall be able to take charge and conduct a rescue if required.

NB: All awnings and carports built on site, including structures built before, during or after site establishment that are solely for the purpose of facilitating construction (i.e. structures that will be removed upon completion of the project), shall be deemed to be Temporary Works and shall be subject to the Temporary Works Requirements as per this section of the specification; section 46. This includes stacking of office containers on top of each other, structures to support water tanks, etc. If the contractor is uncertain, the contractor shall seek clarity from uMkhanyakude District Municipality's H&S Agent, furthermore, should uMkhanyakude District Municipality's H&S Agent determine that a structure on site is temporary works, then the contractor shall comply with the instruction given by uMkhanyakude District Municipality's H&S Agent.

5.8.33 Ladders (Portable)

The contractor shall implement and comply with OH&S Act - General Safety Regulation 13A.



All ladders used on the site is constructed and used in compliance with the OH&S Act and Regulations.

Ladders, which provide access to a working platform, shall extended at least one meter above the platform where it provides access, and is secured to prevent slipping.

Timber ladders shall not be painted other than with clear preserving oils, clear varnishes or clear plastics.

Ladders, which are in a damaged condition, shall not be used and shall be labelled accordingly and removed from the Premises.

All Ladders shall be numbered, logged in a register, and inspected monthly.

A ladder in use shall be held by an assistant or shall be properly tied down. No person is permitted to stand on the last rung of the ladder (ladders with red steps at the top indicate that that step is not to be stood on).

5.8.35 Suspended Loads

The contractor shall implement and comply with OH&S Act - Driven Machinery Regulation 18

Contractors and their employees shall keep out from under suspended loads, including excavators, and shall not stand between a load and a solid object where they might be crushed if the load should swing. They shall not pass or work under the boom or any crane or excavator.

Contractors and their employees shall ensure that crane loads are not carried over the heads of any workmen.

When lifting concrete kibbles or containers with a hinged lifting bail, the crane hook is moused, or the load suspended by means of a sling. This is to prevent disengagement of the bail from the hook on occasions when the weight of the kibble is accidentally taken on formwork, etc.

Guide ropes to be used to prevent loads from swinging.

5.8.36 Working Overhead

Articles falling from heights can cause serious injuries. Employees working overhead shall ensure that materials and tools are properly secured to prevent articles falling.

"MEN WORKING ABOVE" signs are displayed in the appropriate places.

Where there is danger of falling material, fence off the area in danger. Material shall not be thrown from aloft but is lowered in a safe manner - use a securely fixed rope to lower it.

No overhead work is allowed.

5.8.37 Roofing and Cladding

The contractor shall implement and comply with OH&S Act - General Safety Regulation 10

The contractor shall provide safe access for gaining access on to the roofs.

The Contractor shall provide ladders, scaffolds, man-cage or, elevated work platforms for this purpose.

A life-line, consisting of a steel wire rope – the diameter calculated to suit the span and the number of persons attached to it – is to be erected on the ridge of the structure, using a mechanical device, e.g., turnbuckle, for tensioning the wire rope. The lifeline is to be erected/installed, placed on register and checked daily by a suitably qualified, competent and appointed person.

The crew working on the roof is tied with nylon rope to the lifeline via their safety harnesses to allow them freedom of movement for placing the roof sheets.



No work is permitted during rain or when wind speeds exceed 30 Kph. – **This is only a guide it shall also depend on Risk Assessment and working conditions.**

The Responsible Person shall enforce this with the delegated authority on site.

Bundles of roof sheeting stacked on the roof shall conform to the following:

- Only sufficient bundles to be stacked on the roof to meet immediate needs – other bundles to remain stacked on the ground until required
- Bundles of sheeting to be secured by means of 20mm steel strapping applied with a strapping tool.
- Securely tied to the rafters so as to prevent sheets being blown from the roof during high winds
- No material may be stored on the roof over weekends and holiday periods.
- Side and gable cladding to be erected by means of a swing scaffold attached to the roof truss extensions as specified by the manufacturer – no makeshift arrangements is permitted.

5.8.38 Pneumatic Tools and Compressed Air

The contractor shall implement and comply with OH&S Act - Driven Machine Regulation 14

May only be used on site with prior written approval from uMkhanyakude District Municipality Construction Manager.

It is illegal for a pneumatic tool to be operated by using a compressed gas cylinder. Pneumatic equipment shall only draw supply from mobile air compressors or from compressed air lines installed within the premises after gaining permission from uMkhanyakude District Municipality Representative.

When using the interlocking type of connection of an airline, connectors is secured with wire clips through holes provided to prevent accidental disconnection.

Compressed air shall not be used for general cleaning purposes or be used to blow down dirty clothes on people.

5.8.39 Radio-Active Sources

The contractor shall implement and comply with Nuclear Energy Act 131 of 1993

May not be utilised on site without written permission from the Engineer and all statutory requirements is adhered to.

- Radiation operators shall submit proof of certification
- All X-ray personnel shall wear meters and film badges
- Warning signs and lights to be posted at all X-ray activities
- Sources is stored according to legal requirements
- All Contractors is informed of X-ray activities
- X-ray work may only commence with a valid permit to work. The permit will be valid for one and one section only
- X-ray areas to be barricaded and flagged with radio-active identification markers as per legal requirements
- Before commencing with X-rays, uMkhanyakude District Municipality Safety Manager shall be notified

5.8.41 Conveyors

The Contractor shall ensure his employees and those of his Sub-contractors do not attempt to cross conveyors they shall use the safe crossover bridges or subways.

Riding on conveyor belts is forbidden.

5.8.42 Riding On and Operating Equipment

The Contractor shall ensure his employees and those of his Subcontractors do not ride upon or attempt to operate cars, elevators, cranes or other moving equipment unless authorised and licensed to do so.

5.8.43 Fire and Emergency Equipment (Site)

The Contractor shall provide and maintain all fire and emergency equipment. The Contractor shall ensure all personnel familiarise themselves with locations of fire equipment in the vicinity of their work site. Work areas are clear, at all times, of any material, which could fuel a fire. A thorough inspection is made of the area at the end of any working period to ensure that no material is left at the work site, or any situation left in such a manner that a fire or accident could result (All machines to be turned off at main switches, and cylinders to be close and hoses deflated.)

Electric welding, Oxy-welding or cutting, or any other fire hazardous equipment is not to be used inside or adjacent to electrical switch room, control room, cable duct, any electrical equipment or cables without the permission of uMkhanyakude District Municipality Representative

The Contractor shall supply all fire extinguishers for his work as required on the site during the construction phase. Fire extinguishers are not to be used for any purpose other than their intended use.

The Contractor shall ensure that his personnel are trained in the use of fire extinguishers to a minimum of an accredited Level 1 Fire Fighting course.

The objective for providing fire extinguishers will be to standardise on the type and make to eliminate confusion during emergencies

5.8.44 Confined Space Work

Confined Space Work is not envisioned in this project.

The contractor shall implement and comply with OH& S Act - General Safety Regulation 5

Enclosed space work necessitates a Confined Space Permit. This may only be obtained from the authorised person nominated in writing and after approval by uMkhanyakude District Municipality Representative.

The responsibility for safe procedure, both at the time of entry and during the entire operation of entering and working in confined spaces, rests with the Contractor. The Contractor shall ensure that adequate steps have been taken to eliminate or control hazards. Before working in an area which contains dust, the area is to be ventilated and hosed down to settle and dampen the dust.

The Contractor shall provide all necessary equipment to manage confined spaces, including all necessary monitoring and rescue equipment (such as tripods, breathing equipment and the like).

The Contractor shall ensure all persons working in a confined space or managing entry to a confined space are appropriately trained.

Compulsory - Continuous monitoring, trained rescue teams, radio communication & adequate ventilation and resuscitation equipment.

5.8.45 Excavations, Trenches and Floor Openings

The contractor shall implement and comply with Construction Regulation 13 OH&S Act - General Safety Regulation 13

The Contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

All handrails and fencing shall comply with Guidelines and legal requirements as set out in paragraph 5.10 Barricading is provided around all holes or openings to prevent any person being injured as a result of a fall.

Where it is impracticable to provide fixed guard railing, effective removable barriers are provided at all unguarded openings in guard railing or floors and is maintained in position at all times until the hazard no longer applies.

When excavations are necessary across roadways, approval is sought from uMkhanyakude District Municipality Representative. Where necessary, "Detour" notices and detour routes is provided.

Warning signs and flashing warning lights at night is provided in suitable positions to warn any persons approaching the area of the location and extent of any excavation.

Personnel shall report any unusual conditions that may be found, such as underground power lines, pipe lines, sewers or inconsistent materials, immediately to uMkhanyakude District Municipality Representative and, if a risk to personnel safety is involved, stop all work until approval to continue is granted by uMkhanyakude District Municipality Representative.

Safe access and egress to be provided and sides battered or shored to the satisfaction of uMkhanyakude District Municipality Representative.

Note: No loose material is to be placed within 3m of the excavation edges.

The Principal Contractor shall be responsible for safe trenching and excavation work. **"Excavation Work"**, as defined by the Construction Regulations 2014, means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping. All excavation work performed by contractors shall conform, at a minimum, to Construction Regulations 13.

Note: An excavation can be an open (one to multi-sided) excavation, trench, pit, shaft, well, borehole, or similar shaped excavation.

Competent Person

- The Principal Contractor shall ensure that all excavation and trenching work is carried out under the supervision of a competent excavation safety person who has been appointed in writing.
- The Contractor is responsible for the designation of a Competent Person for each excavation. uMkhanyakude District Municipality reserves the right to review the qualifications of any contractor's furnished Competent Person. The competent person is responsible for implementing all aspects of compliance with trenching and excavation operations.
- All excavations shall be on register and inspected daily, before work commences and after inclement weather &/or after any vibration & blasting, by the Contractor's appointed competent person, who shall declare the excavation/s as safe or not and record that decision in the said register.

Pre-Excavation Checks

The following checks are to be done prior to beginning excavation activities:

- Identify hidden obstructions or hazards by obtaining and checking site plans identifying underground pipes or utilities around the excavation. Follow the requirements stipulated in Construction Regulations 13 – (1)(g) for locating and marking underground utilities.
- Care should be used as these plans and records may not be up-to-date or accurate.



- Check the area for previously disturbed ground. Excavations in previously disturbed ground may require additional bracing and shoring. Previously disturbed ground near a new excavation may also require use of bracing and shoring in the new excavation.

Soil Classification:

- The competent person (in this instance a professional engineer or a professional technologist) is to determine the soil type as either (1) Stable rock, (2) Type A, (3) Type B (4) Type C, if using the OHSA 29 CFR part_1926_subpart_P standard
- The classification of soil is to be made based on the result of at least one visual and one manual test.
- Manual tests can be performed by (1) Thumb penetration test, (2) Plasticity Test, (3) Drying test (4) Pocket penetrometer test. A tooth test can be performed to assist determining a cohesive soil's silt & clay particle contents.
- A soil classified as a type A, means it is a cohesive soil with an unconfined compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater & if it is not subjected to vibration nor is in sloping layers & it is not fissured nor has been previously disturbed.
- A soil classified as a type B, means it is a fissured cohesive soil or a granular cohesionless soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); that is fissured, subjected to vibration, has been previously disturbed &/or is <4H:1V (<14°) angle layered or sloped.
- A soil classified as a type C, means it is a fissured cohesive soil or a granular cohesionless soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less, & that has been previously disturbed &/or is >4H:1V (>14°) angle layered or sloped &/or where the soil is saturated or submerged.

Note: Construction Regulations 13 (1)(b) (bb) – “where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in in excavations is decisive and such a decision shall be noted in writing and signed by both the competent person contemplated in sub-regulation (1) and the professional engineer or technologist”

Protective Systems:

- All trenches shall be barricaded as per the barricading standard under section 33 of this Health and Safety Specification.
- Excavations shallower than 1.5 meter (4.9 feet) shall also be sloped or shored if they are in unstable soil.
 1. (Note: Workers kneeling in an excavation less than 1.5 meter (4.9 feet) can still be exposed to the hazards of cave- ins or hazardous environments).
- The depth of an excavation shall be measured at its greatest vertical dimension.
- Spoil piles located close to the edge of an excavation (within 2') shall affect the vertical depth.
- Sloping and Benching
 1. Sloping and benching is a cutting back of the trench walls to the proper angle of repose. Angles of repose are dependent upon soil classification, water condition, previous soil disturbances, etc. The proper angle should be determined by a competent person for each trench. Where the excavation has water conditions, silty material, loose boulders, and areas where erosion, deep frost action, and slide planes appear, the angle of repose shall be flattened. Sloping and benching is to be done at the following ratio, measured from the bottom of each trench wall to the top.
 - a) Type A soil: ¾:1 (53 degrees)
 - b) Type B soil: 1:1 (45 degrees)
 - c) Type C soil: 1 ½:1 (34 degrees)
- Shoring and Shielding



- Shoring of a trench may be accomplished with the use of wood timbers, screw jacks, aluminium hydraulic shoring or combinations of all these methods. The type of shoring to be use is determined by the soil type and soil conditions. Ground water and water intrusion can weaken the soil face and add weight, increasing the force on the shores. If the excavation is below the water line, the shoring should be driven below the bottom of the surface of the trench to prevent undermining:
 - Timbers shall be in sound condition and free of major defects. They shall be equal to the grade size specified. Workers shall be alert for the warning signs of splintering or separating wood fibres.
 - Pressure Gauges, cylinders and rails shall all be in good condition if hydraulic shoring is used. Signs of fluid leakage shall be detected and repaired.
 - Aluminium hydraulic shoring is to be installed according to the approved design and the manufactures specifications and recommendations.
 - Shields are to be installed in accordance with the approved design, and the manufacturers specifications and recommendations.
 - No one is allowed in the trench while shoring or shielding systems are being installed or removed.
 - The tabulated data shall be on site.

Note: Assuming the mass of 1m³ of soil weights 2000kg, then the excavation side-wall shoring support shall withstand a lateral side-wall pressure of at least 50% of the vertical soil mass load, so at a 3m depth the vertical load assumed as 6000kg, so the shoring, at a3m depth, shall support at least a 3000kg side-wall lateral load pressure.

Trench Hazards:

- The lack of a competent excavation safety person performing the daily excavation safety inspections & not ensuring excavation access/egress means are provided within 6m (19.7ft) for or from any workers in an excavation
- Weather conditions can affect the water content of the soil through excess water from rain or melting ice and snow. Water absorption into a soil can soften & liquefy firm soil and increase the cave-in risks potential. pressure on the shores. Standing water in excavations often results in water being absorbed into the soil and side wall cave-ins.
- Freezing of the ground and quick thaw can undermine a shoring system and cause failure. NB: South Africa is unlikely to have any significant freeze-thaw ground condition risks vs overseas conditions, adjust as applicable
- Soils can change properties from exposure to the air. Open excavation air exposure commonly reduces the soil moisture content by evaporation, thereby causing cohesive soil moisture loss & shrinkage, causing fissures & possible instability in cohesive type soils.
- Vibrations from machinery, roadways, railroad tracks, explosives, flares, etc., can cause the soil fabric structure of soils in excavations becoming disturbed & possible cave-in failing or increasing loads on a shoring system and so extra sheeting and shoring may be needed.
- All heavy machinery, vehicles, equipment, etc. shall be kept suitably away from excavation edges especially those that are un-shored or where the shoring design does not include the static &/or dynamic mass loading of such plant, vehicles & machinery loads on the sidewall.
- The location of the spoils may also affect the pressure on a shoring. Spoils shall be kept no closer than 2 meters (6.6 feet) from the trench. Increase the distance when site conditions warrant. The cleared the spoil-pile is from the excavation edge the better, for the identification of potential excavation cave-in tension cracks.
- An excavation on a slope with the spoil-pile placed on the upper sloped excavation side increases the excavation safety risk depth by the spoil-pile height



- The edges of all open trenches shall be protected. Barricades are to be erected to prevent accidental entry, and to prevent equipment from falling into the excavation.
- All tools, equipment and supplies & loose surface materials shall be kept back from the excavation edge to prevent accidental slippage into the trench.
- Hydrocarbon & exhaust vapours are heavier than air. In locations where such vapours may be present, atmospheric monitoring and confined space entry procedures are required.
- All welding and cutting torches shall be shut down at the source when workers depart the excavation or trench.

Excavation Equipment:

- Only trained and qualified personnel may operate excavation equipment.
- Workers in the excavation are not to place themselves below a load being lifted overhead.
- Equipment shall be shut down when the operator dismounts the equipment.
- Refuelling of equipment shall not take place in the immediate vicinity of the site.
- A knowledgeable signal person shall be in place when equipment operators cannot see the bottom of the excavation.

Daily Inspections:

- Daily inspections of the excavation and shoring equipment shall be conducted by a competent excavation safety person and documented.
- Should an unsafe condition be discovered or observed by workers, work shall stop immediately & be evacuated from the affected area, until after corrective action is taken & the excavation is declared safe by the competent excavation safety person.
- Inspections shall also be performed after rainstorms, snowstorms or any other site activity occurrence which may alter the condition and hazard of the excavation or trench.

Access and Egress:

- A means of access and egress shall be provided within 6 meters (19.7 feet) of every worker in a trench 1.2 meters (3.9 feet) or more in depth.
- Ladders shall be in good condition, extend 1 meter (3.3 feet) over the top of the trench and be secured in such a manner as to prevent movement while in use.
- Walkways, runways, and sidewalks shall be kept clear of excavated material or other obstructions.
- No sidewalk, ramp or walkway is to be undermined unless properly shored.
- Where an excavation needs to be physically crossed, suitable temporary walkway crossing bridges with handrails shall be safely erected for such excavation crossing purposes.
- Where a community is exposed to excavation works, suitable & effective barricading, fencing shall be erected along the excavation route to prevent any unauthorized access to an open excavation.

5.8.46 Noise

The contractor shall implement and comply with OH&S Act - Environmental Regulation 7 and the Noise Induced Hearing Loss (NIHL) 2003 Regulations.

uMkhanyakude District Municipality needs to meet statutory requirements on limitation of noise emitted by machines and equipment. When Contractors personnel are required to operate such equipment, noise levels at the operator position shall not exceed an equivalent level of 85-dB (A) during normal working conditions. Employees working in the



vicinity shall not be subjected to an equivalent continuous level of 85-dB (A) during normal operating conditions. Comply with time periods and PPE requirements where applicable.

The sound level at any works boundary caused by mobile equipment shall not exceed the night-time background level pre-existing the operation of the equipment. At no time shall the noise emission of the equipment cause the sound level at the nearest residence to exceed 40-dB (A). Sound levels is measured in accordance with **SANS 10083**, with due allowance being made for tonal or impulsive components. A plot plan of project or plant shall use to identify the measuring points with date, time and frequency duration of measurement.

Symbolic safety signs, warning employees re the hazard of noise in the area, shall be erected at all entrances to the area and in a position where it is clearly visible.

5.8.47 Abrasive Blasting and Spray Painting

Blasting is not envisioned on site.

The contractor shall implement and comply with OH&S Act Hazardous Chemical Substances Regulation 11

The Contractor, prior to performing any shot or abrasive blasting operations on the site, shall:

- Obtain written permission from uMkhanyakude District Municipality Representative
- Comply with any direction from uMkhanyakude District Municipality Representative as to the suitability of proposed blasting site, prescribed times of blasting operations, wind conditions or other considerations that uMkhanyakude District Municipality Representative may deem appropriate

The Contractor shall not commence any spray-painting operation on the site without the written approval of uMkhanyakude District Municipality Representative.

uMkhanyakude District Municipality Representative may conduct an Environmental Impact Audit of the Contractors' proposed operation and the Contractor shall comply with any direction by uMkhanyakude District Municipality Representative in relation to the Contractors' spray-painting operation.

Painting work is carried out in such a manner that airborne particles of paint are contained on the immediate work area.

Any damage caused by such paint particles to privately owned vehicles parked or passing adjacent to the site is the Contractors' responsibility and all cost involved in repairing and making good such damage is to the Contractors' account.

Pressure test certificates, where applicable, shall be produced for every sand blasting pot.

5.8.48 Ventilation

The contractor shall implement and comply with OH&S Act - Environmental Regulation 5

For any job, which generates excessive dust or fumes (for example welding), an effective exhaust system is used.

5.8.49 Lighting

The contractor shall implement and comply with OH&S Act – Environmental Regulations and Schedule E of the Regulation.

Where natural lighting is inadequate, artificial lighting is provided in all work areas, access ways and for rescue equipment.

Portable lights shall have adequate stability and be fitted with a mechanical guard to protect the lamp.



Temporary festoon lighting is of the 'all insulated' type and be supported at least 2.5m above the floor if possible.

Hand lamps are of the 'all insulated' type.

Illumination checks are to be performed for night time work to check conformance to minimum light requirements.

Emergency lighting, when working during night time, for safe evacuation when dark shall be installed according to requirements and shall illuminate during power failures.

5.8.50 Stacking Material

The contractor shall implement and comply with OH&S Act - General Safety Regulation 8

Stacking to be neat and safe.

Before stacking any material, the Contractor, sub-Contractor or their employees shall consult uMkhanyakude District Municipality Representative for allocation of a stacking area.

5.8.51 Manual Handling of Materials

Contractors shall ensure that no employee is required or permitted to lift or move by hand any heavy object that is likely to cause a risk of injury.

Adequate PPE is issued and used if required.

5.8.52 Heat Stress

The contractor shall implement and comply with OH&S Act - Environmental Regulation 2 (4)

To prevent heat stress illness, the Principle Contractor shall plan suitable rest breaks for all employees and Sub-Contractors exposed to excessive ambient or radiant heat.

5.8.53 Explosives

Comply with: Explosives Act 26 of 1956

Explosives shall not be brought onto the site or be used without the express permission of uMkhanyakude District Municipality Representative.

Explosives or detonators shall not be stored on the site.

Detonators and other explosives shall never be carried in the same box.

The provisions of all relevant Acts & Regulations are strictly observed.

5.8.55 Crane Requirements

The contractor shall implement and comply with Construction Reg. 22 regarding Tower Cranes and OHS Act Driver Machinery Regulation 18

All Contractors shall adhere to the following before any Crane is allowed to operate on Site:

No Crane is used at arrival on Site before copies of all documentation have been handed over to uMkhanyakude District Municipality Safety Co-ordinator and the Crane have been checked by the competent uMkhanyakude District Municipality Construction Manager

Crane Test Certificate



The Certificate is no older than 3 (three) months, and shall cover the following:

- Ropes
- Hooks
- Slew Brakes
- Outriggers & Pads
- Boom & Guides
- Anti Two-block Device
- Load Indicating System
- Boom OH & Save Wheels Condition
- Crane Brakes and Air System

Copies of all documentation are kept in the Crane at all times.

All Cranes is fitted with the following Safety Devices - As per the Machinery and Occupational Safety Act. No. 6 of 1983. (Driver Machinery Regulation 18) including uMkhanyakude District Municipality revised best practice).

Regulation 18.2 (Revised to include additional uMkhanyakude District Municipality requirements)

A Brake or other device capable of holding the maximum mass should the power fail, or which is such that it shall automatically prevent the uncontrolled downward movement of the load when the raising effort is interrupted; and

A Limiting device which shall automatically arrest the driving effort when:

- The Hook or Load attachment point of the Power-Driven lifting machine reaches its highest safe position
- In the case of a Winch Operated lifting machine with a lifting capacity of 5000kg or more; the load is greater than the rated mass load of such machine

Regulation 18.2.9 (Revised to include additional uMkhanyakude District Municipality requirements)

No user shall use or permit any person to use a Jib-Crane with a lifting capacity of 5000kg or more at a minimum Jib radius, unless it is provided with:

- A load indicator that shall indicate to the operator of the Jib-Crane the mass of the load being lifted, provided that such a device shall not require manual adjustment from the application of the load, to the Jib-Crane, until the release of the load
- A Limiting Device which shall automatically arrest the driving effort whenever the load being lifted is greater than the rated mass load of the Jib-Crane

Regulation 18.2.11 (Revised to include additional uMkhanyakude District Municipality requirements)

The user shall ensure that every lifting machine is operated by an Operator specifically trained for a particular type of lifting machine; provided that in case of fork lift trucks with a lifting capacity of 750kg or more, and Jib-Cranes with a lifting capacity of 5000kg or more at minimum Jib-radius; the user shall not require or permit a person to operate such lifting machine unless the operator is in possession of a certificate of training, issued by a person or organisation approved for the purpose by the chief inspector.

Mobile Crane near Power Lines

No mobile cranes are to be used near overhead power lines until uMkhanyakude District Municipality Representative has been notified and provided safe access conditions and a valid permit to work is obtained.



Mobile cranes are effectively earthed when working in the vicinity of electrical wires.

Assume that all electrical equipment and wires are live and avoid them.

5.8.56 Usage of Skyjacks & Material Hoist (Builder's Lift)

- No Skyjack is used before the Jack has been inspected and passed by uMkhanyakude District Municipality Construction Manager
- The Test Certificate, no older than three (3) months is produced
- The Safe Working Load is clearly displayed
- The Operators shall make use of Safety belts / Harnesses at all times
- Only trained, competent and appointed persons shall operate Skyjacks
- Proof of Training and Training program is submitted
- No person shall stand of the Handrails of a Skyjack
- When a Skyjack is not operational, it is stopped, no lower than three (3) meters above ground level. The Operator shall make use of a ladder to get in and out of the Skyjack. The ladder is removed to safekeeping when stopped and not in use
- The Power supply is disconnected when not in use thus preventing unauthorised use

5.8.57 Material Hoists

The contractor shall implement and comply with Construction Regulation 19.

5.8.58 Water Environments

The contractor shall implement and comply with Construction Reg. 26.

Notably the Contractor shall provide:

- Provisions to prevent persons falling into water (Solid Barricading).
- Provisions shall be made for rescuing a person in danger of drowning (Qualified Lifesaver, Lifesaving procedure specific to the location and access/egress of the body of water).
- Lifejackets shall be provided to all employees who are exposed to the risk of drowning by falling into the water. Supervision is required to ensure Life Jackets are worn and that procedures and control measure are implemented.

5.8.59 Motor Fuel and Flammable Liquids

The contractor shall implement and comply with OH&S Act - General Safety Regulation 9 and Temporary storage of flammable liquids on construction sites Construction Regulation Reg.25

Contractor's proposals to store fuel on site shall have written approval from uMkhanyakude District Municipality Representative. The amount of fuel allowed to be stored shall depend on site conditions and Statutory Regulations.

Storage areas to be provided with a bund wall to contain 110% of the maximum volume of the container. Drip trays of sufficient size to be provided at tap of points.

Storage tanks are to be clearly marked with a "Flammable Liquid, No Smoking & No naked Flame" signs and be clearly marked to indicate contents of the tank.

Adequate numbers of dry chemical fire extinguishers, each with a minimum capacity of 4.5kg, is provided, installed and maintained.



Before a machine is refuelled, the motor is stopped. Refuelling shall take place at designated safe areas and appropriate warning signs installed.

Inform the Fire Chief of the local Authority for recommendations of storage facilities.

5.8.60 Diesel Storage

May only be on site with prior written approval from uMkhanyakude District Municipality Construction Manager.

The Contractor shall ensure that:

- Storage should be well clear of buildings
- Storage areas is kept free from all combustible materials
- All danger signs are prominently displayed e.g.
- No Smoking
- No Naked Flames
- Adequate Fire Fighting equipment is available
- Diesel tanks is installed in a bunded area; bunded area is able to contain 110% of tank capacity
- Bund walls is plastered on the inside
- Bunded area shall have a solid concrete/cement floor
- Bunded area shall have a functional drain valve
- Loading/Fuelling bay is a solid concrete base with a spillage trench leading to a spillage sump to contain any spillages
- All equipment is bonded
- All electrical lighting and equipment are of an approved flameproof type
- No other material/equipment is stored in the bunded area

5.8.61 Hazardous Material Flammable liquids

The contractor shall implement and comply with Construction Reg. 25 regarding use and temporary storage of flammable liquids on construction sites

Hazardous substances

The contractor shall implement and comply with the OH&S Act - Hazard Chemical Substances Regulations 9

Hazardous substances are any substance or materials specified in statutory regulations as being hazardous.

Prior to any hazardous substances being brought onto the site or produced on the site, the Contractor shall supply uMkhanyakude District Municipality Representative with the following:

- Material Safety Data sheets (MSDS) in accordance with the requirements of the OH&S Act – Regulations for Hazardous Chemical substances
- Proposed arrangements for safe storage
- Purpose for bringing the hazardous substance onto the site
- Proposed methods for handling/usage



- Proposed method of disposal
- Proposed method of transportation
- Risk assessment with specific reference to compatibility with other chemicals

The information is to be provided at least two (2) working days prior to the expected commencement on site.

uMkhanyakude District Municipality Representative shall only approve the use of any hazardous substance after receiving a copy of the Materials Safety Data Sheet for the substance from the Contractor. Such substances are not to be brought onto the site until uMkhanyakude District Municipality Representative's approval is received.

The Contractor shall ensure that all-necessary usage and storage precautions are taken and that safety equipment, including antidotes, if necessary, is available on the site.

Note: Cleaners, Solvents and Hazardous Materials Not to be stored with flammable liquids!

5.8.62 Asbestos

Asbestos is not envisioned on site, however there is a possibility of asbestos waste on the surface from illegal dumping and possible buried asbestos containing material. The Contractor shall familiarise themselves with the 2020 Asbestos Abatement Regulations and implement measures to ensure compliance with the 2020 Asbestos Abatement Regulations.

"These Regulations apply to every employer and self-employed person who may expose any person to asbestos dust at the workplace."

5.9 Incident Management

5.9.1 Incident Reporting System

The contractor shall implement and comply with OH&S Act - General Administrative Regulations 6 and 8.

The Contractor shall have an accident and incident reporting system that is compatible with uMkhanyakude District Municipality's standards and all applicable statutory requirements. Any incident or "near miss" involving uMkhanyakude District Municipality, uMkhanyakude District Municipality's nominated representative, the Contractor its subcontractor's or any third party's personnel, property, plant or equipment, is verbally reported immediately to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, whether or not injury to personnel or damage to property or equipment resulted. A brief written report stating the known facts and conditions and including a preliminary assessment of most likely consequence potential of the incident in the circumstances is provided to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative by the end of the shift.

The Contractor is reminded that this Incident reporting system does not exempt the Contractor from providing accident reports required by Statutory Authorities, in particular, the Contractors' responsibility for reporting accidents in accordance with the requirements of the **OH&S Act & Compensation of Injuries and Diseases Act**.

Contractors shall complete and keep record of Annexure 2 as required by legislation.

5.9.2 Serious Incidents

For any serious incident involving a fatality, or permanent disability, the incident scene is left untouched until witnessed by a representative of the Police. This requirement does not preclude immediate first aid being administered and the scene made safe.

5.9.3 Incident Report and Close Out

The Contractor shall investigate the causes of all work accidents and significant incidents and shall provide uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative with the results of the investigation and recommendations on how to prevent a recurrence. A formal root cause investigation process for all high potential incidents is followed.

The written report shall include:

- Date, time and place of non-conformance
- Detailed description of non-conformance
- Type of injury (if any)
- Medical treatment provided (if any)
- Persons involved
- Corrective action to prevent recurrence

uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative shall have the right to designate a representative to participate in the investigation at uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative's sole discretion.

Where the results of any investigation are not completed and issued to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative within 24 hours from the time of occurrence, the Contractor shall supply to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative a written update every 24 hours, of the progress and results of the investigation until such time as the incident report has been fully completed and issued to uMkhanyakude District Municipality

Where required by Statutory Requirements the Contractor is responsible for incident reporting to the appropriate Authority.

5.9.4 Corrective Action

The Contractor shall:

- Ensure all hazards, incidents and accidents, including near misses, are investigated fully and documented
- Take corrective action to eliminate the cause of the incident or accident to prevent recurrence
- Review inspection and audit reports to identify areas of improvement

For the purposes of this specification, a Health & Safety incident is taken as an incident involving harm or potential harm to any employees of the Contractor, the community, subcontractor and/or the work environment, or where the physical wellbeing of a person, the community or the work environment has been placed at risk, e.g., a near miss.

5.9.5 Injury Management

The aim of injury management is to ensure appropriate and adequate medical treatment is provided to injured employees to enable a quick and efficient return to the workplace.

A local doctor has been nominated for the Project to which the Project medical staff will refer all injured employees requiring medical assistance in the first instance. If the Contractor does not wish to utilise the services of the Project doctor the Contractor shall make alternative arrangements and uMkhanyakude District Municipality is to be notified in writing of the doctor to be used. The treatment of injured personnel will not be compromised, and the immediate needs will be referred as required by the Project paramedics.



The doctor is briefed on the commitment by the Contractor to injury management, alternative duties, and early return to work programs and rehabilitation.

Effective injury management shall commence immediately after the accident has occurred and is to include:

- Counselling of the patient
- Referral to the nominated medical practitioner via the Project First Aid Centre (where required)
- Follow up, including personal off-Site visits by the Contractor (where required)
- Provision of off Site personal, family and social assistance where required
- Formal assessments of employee capabilities prior to return to work; and
- Provision of alternate meaningful duties, where appropriate

5.10 Site Management

To be read in conjunction with other Sections of the Contract.

5.10.1 Notices

The Contractor shall provide to uMkhanyakude District Municipality or uMkhanyakude District Municipality' nominated Representative copies of any notices, correspondence or directions of whatsoever nature issued by any relevant Government Authority concerning Health and Safety within 8 hours of the dispatch and/or receipt of such notice, correspondence or direction, and shall immediately comply with same.

5.10.2 Incorporation of Documents into Contract

The Contractor shall comply with all Site Rules/Site Instructions issued to it by uMkhanyakude District Municipality, which are by this reference incorporated into and made part of this Contract.

5.10.3 Interpretation of Safe Working Instructions

The contractor shall implement and comply with OH&S Act - Section 8 (2) (j)

If any site personnel are in doubt as to the meaning of any safe working instructions, they shall consult their supervisor who issued them or the site office of uMkhanyakude District Municipality Representative.

5.10.4 Emergency Response Manual

The Contractor shall provide uMkhanyakude District Municipality with both electronic and hard copies of the Contractor's Emergency Response Manual that sets out its procedures for fire spill response, rescue from heights and other relevant emergency response procedures. Those procedures are made compatible with uMkhanyakude District Municipality's emergency response procedures for the Site prior to commencing Site activities. Unforeseen conflicts between uMkhanyakude District Municipality's policies and those of the Contractor is addressed and resolved by a direction from uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative prior to the Contractor commencing the work.

5.10.4.1 Emergency Drills

The Contractor shall conduct emergency response drills (including, but not limited to, fire, rescue and spill drills) to test the effectiveness of its emergency procedures and equipment, and the knowledge and proficiency of all response personnel. The timing of such drills is agreed and is the responsibility of the Contractor after consultation with



uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative. The Contractor shall report the test results to uMkhanyakude District Municipality, or uMkhanyakude District Municipality's nominated Representative if requested and as required by any regulatory agency.

5.10.4.2 Fire Fighting

The Contractor shall prominently publish, in all relevant languages for all areas of operation under its control, the procedures to be carried out in the event of fire.

The Contractor shall train all employees in the procedures to be followed in the event of a fire and/or a fire alarm.

Contractors shall familiarize themselves with locations of fire equipment in the vicinity of their work site. Work areas are clear, at all times, of any smouldering material which could fuel a fire. A thorough inspection is made of the area at the end of any working period to ensure that no smouldering material is left at the work site, or any situation left in such a manner that a fire or accident could result.

Electric welding, oxy-welding or cutting, or any other fire hazardous equipment is not to be used inside electrical switch rooms, control rooms, cable ducts or adjacent to any electrical switch room, control room, cable duct or adjacent to any electrical equipment, cables or conveyor belts without the permission of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative.

The Contractor shall supply all fire extinguishers for its work as required by the statutory regulations governing the Site. Fire extinguishers are not to be used for any purpose other than their intended use.

Fire precautions on construction sites

In addition to the guidelines above the contractor shall implement and comply with Comply with: Construction Regulation 29

Good Housekeeping plays a major role in Fire Prevention.

The Contractor shall ensure that:

- All Flammable / Combustible material is removed on a Daily basis
- The minimum amount of Flammable Liquids (Petrol, Thinners and Paint) is brought on to Site
- All required Safety signs is posted if any work is carried out with any Flammable / Combustible materials i.e., NO SMOKING, NO NAKED FLAMES and NO UNAUTHORISED ENTRY
- That Supervisors to do constant and regular inspections to ensure adherence of Procedures

Fire Fighting and Training

It is the responsibility of the Contractor to ensure that supervisory staff and all persons involved in grinding, cutting or welding is familiar with firefighting procedures and the use of firefighting equipment.

Maintenance

All Fire Extinguishers shall be:

- Conspicuously numbered
- Entered in a register
- Visibly inspected monthly by a competent person
- Inspected at least every six (6) months by an accredited supplier
- Results entered in the register and signed



Damaged Equipment

Fire extinguishers with damaged or broken seals are to be returned to an accredited supplier for re-charge / repair. Details are entered in the register.

High Fire Risk Areas

Cognisance is taken of the fact that certain areas might be designated as High Fire Risk Areas on account of the large number of rubber-lined, polyurethane and Fibreglas components etc. present. As such, additional precautions have been instituted to ensure that strict control is exercised over all grinding, cutting and welding operations being carried out in these areas.

5.10.5 Safety Equipment

The Contractor shall ensure that all its safety equipment is regularly maintained and tested, that it is always in a serviceable condition, and that the Contractor's personnel and its subcontractor's personnel are instructed, trained, competent and, where required, certified in the use of such safety equipment. The safety equipment shall comply with all applicable laws, rules, and regulations.

5.10.6 Weather Precautions

The Contractors' Emergency Response Manual shall include procedures for adverse weather conditions (high winds, flooding, storm surge, lightning, etc). In the event of impending adverse weather or other conditions, the Contractor, in consultation with uMkhanyakude District Municipality and uMkhanyakude District Municipality's nominated Representative shall decide whether to institute such precautionary measures in connection with the carrying out of the work, for example emergency temporary bunding, tie down of cranes and partly installed structures, etc.

5.10.7 Vehicles

Access to Site

The Contractor shall co-ordinate his intra-premises vehicles (limited to valid permit holders issued by uMkhanyakude District Municipality Representative only).

Gates may be used by light vehicles with valid permits and shall only be used for heavy vehicle movements with the prior written consent of uMkhanyakude District Municipality Representative.

Vehicles and mobile equipment shall not be permitted entry to the premises without the written approval of uMkhanyakude District Municipality Security personnel.

Upon Written application to uMkhanyakude District Municipality Representative, the Contractors' senior supervisory personnel may be issued with gate passes permitting access to the premises for nominated private vehicles.

uMkhanyakude District Municipality reserves the right to search any vehicle on the premises or when entering or leaving the premises, whether privately owned or otherwise.

The Contractor is solely responsible for the safety and security of any of his vehicles (including private vehicles) on the premises.

uMkhanyakude District Municipality shall deny access to the premises of any driver and/or vehicle not issued with a gate pass and/or failing to comply with uMkhanyakude District Municipality safety requirements.

The Contractor shall attach identification markers provided by uMkhanyakude District Municipality to all of his vehicles permitted to enter the site.

A current maintenance logbook is required for all cranes and large plant equipment and is available for inspection at any time by uMkhanyakude District Municipality Representative. The logbook is located in the cabin of the said crane or plant equipment. Cranes may only



enter site after submission of relevant documents and when tested and approved by uMkhanyakude District Municipality Representative, and relevant authorisation is issued.

Drivers of all construction self-propelled mobile equipment shall carry a valid appointment with them at all times.

Whenever entering the works, the Contractor is to supply to the Main Gate, a list of all equipment and materials being brought on site, which is checked prior to entry being permitted. The list is retained and used for checking the equipment and materials being taken out of the gate when the Contractor is leaving the works.

Vehicle Drivers

The Contractors vehicle drivers shall:

- Comply with all safety, direction and speed signs and drive in accordance with the provisions of uMkhanyakude District Municipality site traffic rules
- Ensure that vehicle loads are properly secured and loaded onto vehicles
- Not divert from designated routes or travel on unsealed roads/areas without the prior written approval of uMkhanyakude District Municipality Representative
- Obey all instructions given by uMkhanyakude District Municipality Security/Emergency Services Officers
- Ensure that vehicles are not overloaded
- Traffic fines will be for the driver. uMkhanyakude District Municipality will not be liable for paying fines

Licensing of Vehicle Drivers

Unlicensed persons shall not be permitted to control vehicles on the premises.

The Contractor shall not permit his employees or employees of his Subcontractors to operate equipment or mobile plant without appropriate appointment. (To be carried by driver at all times)

Registration of Vehicles

All vehicles used by the Contractor on the premises are roadworthy and registered by the appropriate Traffic Authority.

All vehicles used by the Contractor on the premises are maintained to standards of the **Road Traffic Act 29/1989**.

The Contractor shall provide evidence to uMkhanyakude District Municipality Representative that all mobile cranes, forklifts, front-end loaders, back hoes, elevated platforms, road vehicles or mechanical equipment of any kind, which is used in complying with the Contractors' obligations under this Contract, comply with the requirements of the **Occupational Health & Safety Act 85/1993** and regulations and of the **Road Traffic Act 29/1989** prior to that equipment being brought onto the premises.

In the event the equipment is not owned by the Contractor, the Contractor is still responsible for ensuring all conditions are complied with by all of his Subcontractors or hire companies.

On-Site Vehicles

Owing to heavy traffic operating in and through the construction site and in the interest of general safety only the minimum necessary number of Contractors vehicles is permitted on site.



When not travelling through the site the Contractors haulage vehicles or cranes is parked within his site lay down area. Only the Site Manager's personal vehicle is permitted to park in the Site Offices area.

All cars are parked on site are parked at the owner's/Contractors' own risk!

Accidents

In the event of an accident on site in which The Contractors' employee or Sub-Contractor is involved, the driver shall remain at the scene until the accident is attended by uMkhanyakude District Municipality Representative, or the Contractor has received approval from uMkhanyakude District Municipality Representative, to leave the scene, unless medical attention is required.

Vehicle Safety

In order to maintain a "Zero Tolerance" Policy in the use of self-propelled equipment the following rules is adhered to at all times on Site or any other plant.

As far as driving / operating of any self-propelled vehicle / equipment on site uMkhanyakude District Municipality requires that the driver / operator of such equipment be appointed in writing by the Contractors Construction Manager and confirm that the person has attained the age of 18 years and:

- Does not suffer from defective sight or hearing or any other infirmity, mental or physical, likely to interfere with the efficient discharge of his duties
- Has completed a satisfactory course of training; and has been found competent or in possession of a driver's license issued by a provincial authority for which authorisation is granted

Rules

Traffic rules and signs such as speed signs; stop signs is obeyed at all times.

As a result of the large amount of heavy equipment and other vehicles in operation on site all vehicles / equipment; drivers / operators shall adhere strictly to all rules and regulations.

Should any person be stopped for not adhering to regulations, his permit is withdrawn, and he shall not be able to carry on with his normal duties. The driver of the vehicle is responsible for the safety of his passengers in or on the vehicle.

- No passengers are allowed to be on the back of any vehicle in motion or sit on the sides of the vehicle or having any part of his body hanging over the side of the vehicle whilst in motion.
- No passengers are allowed in or on the back of a vehicle with any unsecured load
- Under no circumstances shall any person try to secure any load manually whilst the vehicle is in motion. Loads on the vehicle is properly secured before the vehicle is allowed to move
- No passengers are allowed to sit on top of the load if the load is higher than the sides.
- The 2-man rule is always applied. Only 2 persons (the driver and one passenger) are allowed in front of an LDV
- No passengers are allowed on Mobi-lifts, elevated work platforms (EWP), mobile cranes, tractors, fork trucks or dumpers or on trailers behind vehicles
- No vehicles are left with the engine running or the keys in the ignition, if the drivers leave the vehicle unattended
- Should the load be moved and transported by means of a mobi-lift, guide ropes shall always be in use. Persons guiding the load are not allowed between the lift and load, and the load shall, under no circumstances obscure the view of the driver. The mobi-lift shall travel at a slow walking speed

In the event of an accident in which The Contractor's employee is involved, the employee shall remain at the scene until uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, or the Police arrive on the scene or until uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, or the Police authorises the employee to leave the scene, unless the employee needs medical attention.

Transportation and Securing of Loads

Long and Wide Loads

When transporting long and wide loads, the Contractor shall ensure compliance with the Road Traffic Regulations. uMkhanyakude District Municipality Representative is notified so those necessary requirements can be made where an escort may be necessary and so that the appropriate entrance can be arranged.

Securing of Loads on Vehicles

It is unacceptable that a person is injured, or property damaged as a result of loads being transported on site without appropriate securing.

Principles

- Any load-carrying vehicle is loaded, secured and driven in such a way so as to prevent injury to any person, or damage to any property
- The vehicle should be suitable for the type and size of the load
- The load is correctly positioned on the vehicle
- The load-securing equipment and vehicle restraint structures is strong enough for their intended purpose and is functional
- Loads is restrained to prevent unacceptable movement
- The driver shall take into account the changes in the vehicle's stability, steering and braking characteristics influenced by the load

What Truck Drivers Shall Do:

- Secure the loads according to the "Principles" as detailed above.
- If unsure, seek advice before proceeding

What Dispatch Points Shall Do:

- Check that the load has been restrained correctly before the truck is allowed to leave

Note: Nobody may ride on the back of any loaded vehicle.

5.10.8 Commencement of Work

Prior to the commencement of any Site work, the Contractor shall consult with uMkhanyakude District Municipality uMkhanyakude District Municipality's nominated Representative regarding the availability of and access to the item or area of the plant to be worked on and regarding instructions relating to any special or unusual safety procedures that are to be followed.

The Contractor shall not commence work on a particular item or area of the Site until uMkhanyakude District Municipality, or uMkhanyakude District Municipality's nominated Representative has provided the appropriate "authority to commence work".

5.10.9 Notifications

5.10.9.1 Electrical Work (Power Supply)

The Contractor shall submit to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and the Power Authority, in writing, notification of completion of any power supply system electrical work prior to power being supplied. No further work is undertaken without the written acceptance of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and the Power Authority. All electrical work is carried out in accordance with the relevant statutory requirements. The Site Construction Manager and the Master Electrician shall approve all electrical work before being energised.

5.10.9.2 Plumbing Work

The Contractor shall submit to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative, in writing, notification of completion of any plumbing work prior to water being supplied. No further work is undertaken without the written acceptance of uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative. All plumbing work is carried out in accordance with the relevant statutory requirements.

5.10.10 Completion Inspection

On completion of any work on Site the Contractor shall notify uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and conduct a final inspection to ensure that all items and areas of plant are left in a safe, clean and operational condition.

5.10.11 Housekeeping

The contractor shall implement and comply with Construction Reg. 27

The Contractor shall maintain all work areas in a tidy state, free of debris and rubbish. Unless directed otherwise, the Contractor shall dispose of all debris, rubbish, spoil and hazardous waste off site, outside uMkhanyakude District Municipality's property in a designated and authorised area or facility. The Contractor should make itself aware of uMkhanyakude District Municipality's waste management plan and collection and disposal arrangements and align its waste management program accordingly.

In cases where an inadequate standard of housekeeping has developed and compromised safety and cleanliness, uMkhanyakude District Municipality Representative has the right to instruct the Contractor to cease work until the area has been tidied up and made safe. Neither additional costs nor extension of time to the Contract is allowed as a result of such a stoppage. Failure to comply shall result in site cleaning by another Contractor at the cost of the non-complying Contractor.

The Contractor shall carry out regular safety/housekeeping inspections at least weekly to ensure maintenance of satisfactory standards. The Contractor shall document the results of each inspection and shall maintain records for viewing by uMkhanyakude District Municipality Representative.

At the time that the Contractor establishes site facilities and permanently mans the site, or at an alternative time agreed between uMkhanyakude District Municipality and the Contractor, the Contractor shall assign dedicated housekeeping crews.

These crews shall assist in maintaining a clean and safe working environment by patrolling the Contractors' work area (including uMkhanyakude District Municipality site offices, lay down areas and construction site) and performing such duties as ensuring that scrap material, general refuse, rubble and other forms of unwanted materials are removed from the site within four (4) hours of generation.



Housekeeping crews shall also actively assist in creating and maintaining a safe work environment by being aware of unsafe conditions, bringing these conditions to the attention of appropriate personnel, and by direct intervention through tasks such as ensuring leads and hoses are placed in a manner which avoids the creation of trip hazards or potentially unsafe conditions.

Note: No shift may commence without and/or before proper housekeeping is in place.

5.10.12 Maintenance

All equipment and structures both fixed and temporary are to receive regular maintenance, at intervals no longer than that recommended by the manufacturer, under a planned maintenance system to ensure the safety of personnel who are responsible for operating the equipment.

The Contractor shall maintain copies of all current tests and maintenance certificates relating to cranes, lifting beams, pulley blocks, lifting gear and slings, and shall make them available to uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative upon request. No lifting beam or spreader bar is used unless a current Certificate of Inspection is available and the SWL is stamped on the equipment.

5.10.13 Defect Reporting and Correction

Where defects are identified during any routine inspection, pre-start check or during operation or use of any tools, equipment, motor vehicle, structure, etc it is immediately reported for repair and the tools, equipment, etc appropriately tagged to identify the defect and to limit further use until repairs have been completed and re-inspection carried out. Such defect reports are in writing.

5.10.14 Contractor Health & Safety Documentation

The Contractor is required to supply to uMkhanyakude District Municipality Health & Safety documentation as indicated in this Specification and as directed by uMkhanyakude District Municipality throughout the Contract.

5.10.15 Electricity

The contractor shall implement and comply with OH&S Act Electrical Installation Regulations OH&S Act Construction Reg.24

All electrical installation is carried out by an appointed and qualified ticketed electrical installation electrician. The Contractor shall keep a record of his approval of the installation. The electrical installation shall be approved by a Master Electrician.

Temporary electrical installations shall be inspected on a weekly basis by a competent person and registers of such inspections shall be kept.

Electrical Safety:

The Principal Contractor is responsible for electrical safety and is to follow all Electrical Installation Regulations GNR.242 of 6 March 2009, Electrical Machinery Regulations 1988 GNR 1593 1988, Construction Regulation 24. Electrical installations and machinery on construction sites, and other applicable SANS standards and legislative regulations.

Additional Requirements:

The Principal Contractor shall ensure all contractors have an electrical safety program equivalent to the level of work they are performing. This shall include a high voltage electrical safety program and/or a low voltage electrical safety program. Each contractor shall also ensure that adequate protective equipment, training, guidelines, procedures, and other protective measures for employees exposed to potential electrical hazards is provided. In addition, at a minimum:

Only a Qualified High Voltage Electrical Worker is allowed to work on energized conductors or equipment connected to energized high-voltage systems. With the exception of replacing



fuses, operating switches, or other operations that do not require the employee to contact energized high voltage conductors or energized parts of equipment, clearing trouble or emergencies involving hazard to life or property, no such employee shall be assigned to work alone.

Contractor shall develop and implement a written High Voltage Standard Operating Procedures (SOP) for High Voltage Activities. All activities, performed by either an employee or by a High Voltage Electrical contractor, shall have a SOP developed, documented, and reviewed by their employer.

De-Energized Electrical Work

- Each contractor shall develop and implement a "Control of Hazardous Energy / Lockout Tagout Program". Electrical systems shall be worked on in the de-energized state, whenever feasible, following the work practices described in their program. Energized electrical work should only be performed in situations where utilizing Control of Hazardous Energy practices increases the hazard(s) to the employee and/or equipment or it is not feasible (e.g., performing metering and testing).
- The Lockout/Tagout program shall be coordinated and communicated to all subcontractors.
- The contractor is responsible for ensuring subcontractors are properly trained and are aware of site-specific LOTO requirements.

SANS Compliance:

Contractors shall comply with the most current family of SANS Electrical standards. This includes training and competency for all elements contained in the standards.

Working in Wet Locations:

Work in wet or damp work locations (i.e., areas surrounded or near water or other liquids) where there are live electrical parts should not be performed unless it is absolutely critical.

If the work cannot be avoided, the controlling contractor shall ensure that a wet work permit is developed and completed that allows for safe work.

Temporary Electrical:

All electrical work, installation, and wire capacities shall be in accordance with the pertinent provisions of the Electrical Installation Regulations GNR.242 of 6 March 2009, Electrical Machinery Regulations 1988 GNR 1593 1988, Construction Regulation 24. Electrical installations and machinery on construction sites, and other applicable SANS standards and legislative regulations.

Extension Cords:

- Extension cords used with portable tools shall be heavy duty and rated for construction work. Damaged electrical cords shall not be used.
- Keep extension cords out of walkways and stairways.

Temporary lighting:

- The Site shall be lit with temporary lighting to ensure the security of the site at night and to provide lighting for night shift work.
- Temporary lighting levels shall be maintained at a minimum of 1.5 meter. per sq. meter (4.9 feet. per sq. foot) throughout rough construction and at a minimum of 15 meter. per sq. meter (49.2 feet. per sq. foot) (or permanent lighting) for finish applications.
- Employee parking lot lighting and access/ egress lighting to the building or work site shall be maintained at a minimum of 600 millimetre per sq. meter (23.6 inches. per sq. foot).



- Temporary lighting circuits shall be a SANS approved assembly.
- Open wiring is NOT acceptable for temporary lighting circuits. 'Open wiring' refers to the individual conductors being physically separated.
- Lighting on barricades, fences, or sidewalk coverings shall be encased in metal raceway.
- Bulbs for Temporary lighting shall have guards to prevent accidental contact.
- Splices in conductors, when required, shall be made within a secured junction box.
- All shop lighting and portable task lighting shall have a cover and guard installed when in use or available for use.

Wiring ground:

- All temporary wiring shall be effectively grounded in accordance with the National Electrical Code.
- All non-current carrying parts of electrical equipment shall be grounded or have an approved double-insulated setup. Grounded circuits shall have enough capability to carry all currents likely to be imposed on it.

5.10.16 Wearing of Short Trousers/Pants on Site (Prohibited)

Long trousers / pants are worn in the construction areas or in any workshop in the lay down area.

5.10.17 Intoxicating Liquor or Drugs

The contractor shall implement and comply with OH&S Act – General Administrative Regulation 10

Any person found on the site or attempting to enter site, in possession of or consuming intoxicating liquor or illegal drugs or considered unfit for work from the apparent influence of intoxicating liquor or illegal drugs or prescription drugs, is removed from the site.

5.10.18 Access Control

The Contractor shall comply with uMkhanyakude District Municipality access control systems applicable to the Plant as well as specific to the construction site.

Failure to comply with these requirements is viewed as a major safety breach requiring disciplinary action of removal from site and/or suspension without payment.

5.10.19 Trespass

The Contractor and his employees shall not trespass on any land outside the limits of the site, as determined by uMkhanyakude District Municipality Representative, and shall ensure that all fences are maintained during the Contract. If instructed by uMkhanyakude District Municipality Representative, the Contractor shall remove from the site any employee who offends against the provision of this clause.

The Contractor and his employees are required to work only in the specified construction areas and access to these areas is only by routes specified by uMkhanyakude District Municipality Representative.

5.10.20 Visitors to Site

Visitors to the site are required to comply with site-specific safety induction prior to being allowed access to site. Visitors are required to conform to the Site PPE requirements and should arrive at site with the appropriate PPE.

The Contractor shall refer all applications for site inspections to uMkhanyakude District Municipality Representative. The Contractor shall not arrange inspections by visitors to the site without the prior approval of uMkhanyakude District Municipality Representative.



The Contractor, at uMkhanyakude District Municipality Representative's direction, may allow casual visitors, who will be on site for less than one (1) day, access to the site without attending an induction, providing that, for the full period the visitor is on site, the visitor remains in the care and custody of a person who has been properly inducted.

5.10.21 Construction Welfare Facilities

The contractor shall implement and comply with Construction Reg. 30, but as a minimum the following shall apply:

- Showers: Ladies and Men's as per CR30(1)(a).
- Toilets: Ladies and Men's with a ratio of 1:15 and must be compliant with CR30(1)(b).
- Hand basins with clean running water on tap, hand soap and means to dry hands to be provided at each toilet area.
- Weatherproof Changing facilities as per CR30(1)(c) and must have Storage and safe keeping areas/lockers for workers personal belongings.
- Weatherproof Eating facilities as per CR30(1)(d).
- Safe drinking water with individual cups (taps/containers to be labelled with "Safe Drinking Water" pictorial sign).

5.10.22 Emergency Evacuation

The contractor shall implement and comply with OH&S Act – Environmental Regulation 9

The Contractor shall establish and implement an emergency evacuation procedure in line with the Site-Specific Emergency Plan and ensure that in the event of fire, explosion, flooding etc. all staff leave their place of work at the sound of the fire gong or siren and proceed to a safe area demarcated for the purpose, away from offices and stores buildings. The Contractor shall provide a siren markedly different from that of the operating plant area.

The area so selected is demarcated and the relevant "Assembly Point" sign displayed. An evacuation route diagram is visibly displayed in all buildings.

An Emergency Evacuation Procedure is drawn up; all staff members and Contractors given awareness training and participate in regular evacuation drills.

The procedure shall be submitted to uMkhanyakude District Municipality Project Manager.

5.10.23 Construction Health and Safety Officer, Health & Safety Roles and Responsibilities

Contractors Site Construction Health and Safety Officer:

- Implement and maintain the Safety Management Plan on site. Communicate Plan to Sub-Contractors and ensure compliance to the Safety Management Plan
- Advise the Site Management team on safety issues and suggested solutions
- Report directly to the Contractors Construction Manager and act on his authority regarding safety issues
- Promote a culture in which safety is the prime concern and shall never be compromised
- Promote the involvement of all employees and Contractors in improving safety
- Focus on and establish a culture of the elimination of unsafe acts, and rectification of unsafe conditions quickly, by Management and supervision
- Ensure self and others safety awareness at all times
- Facilitate and participate in all Contractors and Sub-Contractors accident /incident investigations
- Ensure that all incidents are thoroughly investigated to avoid re-occurrence



- Participate in and contribute to uMkhanyakude District Municipality Management team Safety Plan
- Ensure that all involved uMkhanyakude District Municipality and Contractors personnel prior to commencement of any work complete Risk Assessments (RA) and Daily Safety Task Instruction (DSTI). Then, by a review process, verifying that the development process is appropriate, communicated and understood by the users and subsequently complied with by means of at least two daily site inspections
- Ensure SMI boards are erected in each working area, and the following minimum information is displayed – Method Statement, Risk Assessment, DSTI, Construction Manager, Supervisor, First Aider and Safety Representative
- Coordinate all safety induction training requirements and conduct uMkhanyakude District Municipality specific induction for uMkhanyakude District Municipality and Contractor supervision
- Coordinate site accesses and security
- Coordinate and implement comprehensive daily incident reporting by management, supervision, foremen and Construction Health and Safety Officers
- Compile and present a weekly safety report to include Incident trend analyses & preventative measures. Injury trend analysis and preventative measures. Contractors & Sub-Contractors Planned Tasked Observations for week ahead, DSTI quality and effectiveness. Management walkabouts including participation and findings. High risk activities for the week ahead. Risk Assessment plan for week ahead, based on the construction plan. Statistics for previous week regarding man-hours, complement, RA's completed, induction & medicals (entry and exit). Estimates for week ahead regarding, complement, RA's, induction & medicals (entry and exit)
- Conduct a Bi –weekly internal Contractor & Sub Contractor audit to ensure implementation and continuous compliance with the Safety Management Plan and legislative compliance. Record findings and issue action sheets for deviations to include an action close out plan and report
- Accompany injured people to doctor/hospital and ensure prompt treatment and return to work. Report all Incitements in a timely manner in the case of a medical treatment/Lost Time Injury cases immediately (telephonic) to the Project Health & Safety Manager and follow it up with an initial Incident Notification and Significant Safety Occurrence (SSO) report before the end of shift and a complete investigation within 24 hours
- Coordinate and ensure the pre check and recording thereof for all tools, plant and equipment
- Final check and sign of RA's before submitting to uMkhanyakude District Municipality Project Manager for approval
- Implement and maintain the Construction Regulations

5.10.24 Risk Assessments (RA's)

- To be completed **one week** before the execution of a job and submitted to uMkhanyakude District Municipality Project Manager for approval, to avoid delays. (See **Annexure 1** for the required document)
- Each Contractor shall submit a RA plan that will also include a monitoring and review plan
- Attach **Safe Work Procedures** and **Safety Method statements** (See **Annexure 2** for the required document) to Risk Assessments
- Each Supervisor to communicate Job specific Risk Assessments to every person involved on the job, and workmen shall sign acknowledgment the communication of



and understanding the risks related to the job and preventative measures and controls

- **General Risk Assessments will not be accepted**

RA Team to consist of the Contractors' Construction Manager, Specific Task Supervisor, and Specialists executing the job, Construction Health and Safety Officer and uMkhanyakude District Municipality Supervisor and or Project Manager.

5.10.25 Daily Safe Task Instructions (DSTI's)

- Each Contractors' Supervisor and Foreman shall, on a daily basis before work commences, inspect his work area and complete the checklist part of the DSTI. (See **Annexure 3** for the required document)
- Complete the DSTI regarding tasks for the shift, specific hazards and specific precautions and also refer to and discuss the precautions and controls of the relevant Risk Assessments
- Discuss the DSTI with his team
- The supervisor and his team shall then sign the DSTI acknowledging communication thereof

If the scope of work or job changes, the DSTI is revised and communicated before commencing with changed job.

5.10.26 Planned Task Observations (PTO)

- Each Contractors Supervisor and Foreman will complete and submit at least one PTO daily. (See **Annexure 7** for the required document)
- When sub standards are identified RA's is revised and communicated again discuss and rectify non-standard actions with employee.

5.10.27 Management - Visible Felt Leadership (VFL)

- The Contractors' Construction Manager, Construction Health and Safety Officer, supervisor and Foreman per area, shall conduct and record a Daily Visible Felt Leadership checklist. (See **Annexure 5** for the required document)

5.10.28 Health and Safety Experience board

The Contractor shall provide a Health and Safety Experience board, to be approved by uMkhanyakude District Municipality Manager, displaying:

- Department of Labour Construction Permit Number (where applicable).
- Contractors Logo
- uMkhanyakude District Municipality Logo
- Manpower
- Lost Time Injury Frequency Rate -LTIFR
- Disabling injury frequency rate - DIFR
- Man-hours
- Incidents and injuries

5.10.29 Safety Management Information Notice Boards

The Contractor shall provide Safety Management Information notice boards (SMI boards) in work areas per foreman, with the following posted:



- Relevant Risk Assessments
- DSTI
- Method Statements
- Weekly Safety Report
- Emergency Procedure
- Supervisors Photo and Contact detail
- First Aid Photo and Contact detail

5.10.30 Site Specific Health and Safety Rules and Requirements

The Contractor shall provide, ensure implementation and comply with the following Site-Specific Health and Safety rules and requirements

- Safe **Access and Egress** to and from work areas
- Good **Housekeeping** and Stacking Practices – continuous cleaning and clearing of work platforms after every shift. No work to commence before complying
- Safe and orderly routing of **welding cables, electrical extensions and air hoses**. Elevated out of walk ways on temporary hooks/racks
- **Rigging Studies** for all heavy and/or difficult lifts: $\geq$ Five (5) metric Tons or for critical path/long lead time items regardless of weight.
- No lifting in **windy conditions** exceeding 30 km/h. (This is only a guide - it will also depend on Risk Assessment/Rigging study/Shape mass & Size of load and the capability of the Crane to be used!)
- Prohibiting certain work in **wet conditions** – elevated work, roof sheeting installation, etc
- People shall not be **transported** on the back of a bakkies/trucks or Plant, shall be compliant with CR23 including the following requirements:
 - Never on top of material! Material to be secured by means of tie down straps/cargo nets (People and Material to always be separated).
 - The vehicle license disk shall determine the number of people that may be transported in the vehicle/plant (this number shall never be exceeded).
 - Anyone travelling in a vehicle/plant shall wear the seatbelt as fitted by the manufacturer. Seat belts shall be maintained and in good working order at all times – no seat belt no ride.
- **Elevated work** - Compulsory use of **Lifelines, Safety Harnesses & Fall Arrestors** including a height rescue system and training of rescuers. To comply with SABS-EN –353-355,358,360-365,795,813&SABS033, 1833, 341,564-567,892,1891,12277 and 4878 -Fall Right SA standards or equivalent - Attached at all times in elevated positions and use of double lanyards
 - **Scaffolding** to comply with Legal, SANS 10085 and uMkhanyakude District Municipality standards – Tagged to SGB Standards using a three-tag system (Green, Orange and Red). Green tag = Fully Compliant with no openings and no safety Harness is required, Orange Tag = scaffolding is as compliant as possible but opening exist to allow for work – Double Lanyard Safety Harness shall be worn and used as per Work at Height US229998 training, Red Tag = Scaffolding not safe for use/scaffolding is being erected or dismantled by the scaffolding erectors.
 - Ladders on inside of frames, staggered every two meters with a safe landing platform



- Trap door fitted on working platform
- **Work benches** to be provided for onsite work
- Riggers to be identified by means of **illuminating vests**
- **Solid Barricading** – Solid frame covered with orange netting – Excavations, Overhead Work, walkways and all Openings
- Attaching of Tools and Equipment at heights – use **lanyards**
- Wearing of **Gloves** applicable to task and approved eye protection for all activities
- Use of **Spacers/Wedges** when fitting equipment
- **Shields and fire blankets** to be used for grinding, welding & gas cutting operations to contain sparks
- **Fire Extinguishers** – With people when doing hot work, on self-propelled mobile machines and at all fuel driven machines
- **Guide ropes** to be used for all lifts
- **Firewatchers** to be posted when commencing hot work in hazard prone areas
- **Permits** to be obtained and adhered to
- **Excavations:** Provide for shoring, battering back, soil and loose rocks to be 2 meters from edge and approved barricading
- **Dedicated flagmen** with illuminating vests to be in control of movement of heavy mobile and earth moving equipment
- Submit a **Safety incentive scheme** for approval, and provide for the cost for it
- Equipment Construction Health and Safety Officer – **Computer with internet access and cell phone with data and minutes.**
- The **cradle to grave** principle is implemented and adhered to regarding spillage of hazardous and flammable substances
- **Voltage reducers** fitted to all welding machines
- **Concrete buckets** to be fitted with Safety Chains and opening wheels
- **Earth leakage** units to be fitted to all portable generator sets and welding machines with electrical outlets
- **Earth moving vehicles** to be fitted with prescribed rotating lights and operated with headlights on. Site vehicles to be fitted with whip aerials and rotating lights. Reverse hooters/back up alarms to be functional at all times
- **Weatherproof caravan type connections** fitted to all electrical equipment and extensions when used externally in wet conditions
- **Nine Inch Grinders** not to be used, unless fitted with backing plate
- **All cranes** are fitted with: Anti two block cut out devices/Automatic load arrest systems/ Automatic load limit devices and indicators/Gear lock on neutral and a waste safety belt
- **All Self-propelled mobile machines** are fitted with Fire extinguishers and reverse hooters/ back up alarms
- **Flashback Arrestors** at cylinders and torches and proper clamps (gas cutting equipment
- Correct and safe **manual lifting** operations



- **Supervision ratio** of foreman to workers - Not > 1:15
- Two long new **sleeve overalls** with company logo on back to be provided every six months. (or more frequently, if required due to specific task)

Hardhat Identification:

This is a recommended colour coding should the contractor wish the colour coding can be altered and a colour coding shall be submitted.

- Contractor Management = White
- Design Team = White
- Visitors= Purple
- Foremen and Middle management = Yellow
- Workers = Blue
- Security & Construction Health and Safety Officers = Red
- Direct contractors = Grey
- First Aiders = Green
- Riggers & Banksman = Orange

Sheltered Resting and Eating Areas with:

- Tables & chairs
- Hand washing facilities
- Adequate potable water provided

Portable toilets:

- At a ratio of 1:15
- To be cleaned daily and maintained weekly as minimum requirement (Daily Inspection Record Required).
- Running water to be available at toilets with soap to wash hands.

5.10.31 Fundamental health and safety requirements

Before any work commences, proof of and the following non-negotiable deliverables are required:

- Legal liability training of all Supervisors and Construction Managers
- HIRA and Supervisor Training Certificate level course or equivalent approved course for all Construction Managers and Supervisors.
- Incident investigation training by Construction Manager and or Construction Health and Safety Officer.
- Letter of good standing with the Workman's Compensation Commissioner
- Original of the notification of construction work stamped by the Department of Labour (Scanned copy to be emailed to the uMkhanyakude District Municipality Health and Safety Agent).
- Public Liability Insurance
- Competency training certificates of people to execute the job



- Method statements for work to be conducted
- A Baseline Risk Assessment
- Risk Assessments for every Job/Task
- A Construction plan detailing each activity per job
- Signed legal appointments as required by legislation
- Contractors' Construction Health and Safety Officer - to be interviewed and approved by uMkhanyakude District Municipality's appointed Health & Safety agent
- All equipment to be on a current register, backed up by relevant test certificates
- A Medical fitness certificate for each employee with Annexure 3 completed per employee
- Attending of the Contractors Job Specific Induction
- Health and Safety Management Plan
- Health and Safety file table of contents (to follow order of Safety File Checklist Annexure 4)

5.11 Hazardous Biological Agents Requirements

5.11.1 Policies and Procedures

The contractor will be required to include Hazardous Biological Agents (HBA) hazards, risks and control measures into their Task Specific Risk Assessments. The Contractor shall also compile and submit for review and approval, before re-establishing site, the following documents in accordance with the Hazardous Biological Agents (HBA) Regulations:

- HBA Policy: To be signed by the Chief Executive Officer 16(1).
- HBA Prevention and Control Management Plan (See Annexure 10 for guidance) which will include Procedures on how the Department of Health and the Hazardous Biological Agents (HBA) Regulations shall be complied with.
- Compliance Commitment letter to be signed by all persons in a supervisory role (Foreman/Supervisor/Construction Manager).
- The contractor shall include, in their induction program, the requirements of the Hazardous Biological Agents (HBA) Regulations.
- The contractor shall revise their emergency response plan and first aid procedures to include the requirements of Hazardous Biological Agents (HBA) Regulations.

The contractor will also be responsible for the following, which shall be explicitly detailed in there HBA Prevention and Control Management Plan:

- Ensure that all persons on site including Sub-contractors, Visitors, Client and Professional team comply with the HBA Policies and Procedures.

5.11.3 Social Distancing

Where possible social distancing shall be observed at a distance of 1.5-meters (2m shall be preferable).

Handshakes should be discouraged.

5.12 End of Contract Documentation

The Principal Contractor shall ensure that the uMkhanyakude District Municipality's Health and Safety Agent is informed in writing, with at least two weeks' notice, of the contractor's intention to de-establish site on conclusion of the contract.

The uMkhanyakude District Municipality's Health and Safety Agent, upon being informed in writing of the Principal Contractor intention to de-establish site, shall schedule a Close Out OHS Audit of the Site with the Principal Contractor Appointed CHSO (**NB:** CHSO shall be present at the OHS Close Out Audit). The Close Out OHS Audit can only be conducted once the Principal Contractor has fully de-established from site and has completed all rehabilitation works.

The Principal Contractor's OHS File shall be present on the day of the Close Out OHS Audit to facilitate the cancellation of all legal appointments.

The Principal Contractor shall prepare for this Close Out OHS Audit using the "End of Project Documents" template provided (Annexure 12).

All documents as required by the "End of Project Documents" template, shall be provided in soft copy. The soft copy shall be provided on USB memory stick with:

1. All completed and fully signed copies of required documents.
2. All appointments (as cancelled during the OHS Close Out Audit)
3. All documents to be placed in labelled folders that correlate with the "End of Project Documents" template wording.
4. All Documents to be correctly labelled as per "End of Project Documents" template wording.
5. All documents shall be stand alone (i.e. do not scan 30 staff members Annexure 3 Medicals in as one document, ensure each medical is scanned and labelled individually).

The Principal Contractor shall retain the hard copy of their Health and Safety File with all subsidiary files relating the Health and Safety on the contract for a minimum period of Five (5) years.

The Principal Contractor shall retain the hard copies of all Sub-Contractors Health and Safety Files with all subsidiary files relating the Health and Safety, for each sub-contractor, on the contract for a minimum period of Five (5) years.

Archived Documentation Requests (After project is complete and site has been de-established):

The Principal Contractor shall make available, any health and safety documents relating to the project, in hard or soft copy as may be requested by the uMkhanyakude District Municipality or uMkhanyakude District Municipality's Health and Safety Agent, within two (2) weeks of the request.

Note: uMkhanyakude District Municipality or uMkhanyakude District Municipality's Health and Safety Agent has the right to request and retain any original OHS Project Related Documents once the site has been handed back to uMkhanyakude District Municipality.

5.13 Termination and Suspension for Breach of Health and Safety Conditions

uMkhanyakude District Municipality and the Contractor agree that the provisions of this Clause are of the utmost importance, and any relevant violation of them is considered to be a material and substantial breach of this Contract.



The Contractor shall not cause, permit, or tolerate a hazardous, unsafe, unhealthy or environmentally unsound condition or activity over which it has control at the Site. If the Contractor becomes aware of any hazardous, unsafe, unhealthy or environmentally unsound condition, including a violation of any of the Health and Safety requirements, it shall immediately notify uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative and take whatever steps are necessary and as is agreed between uMkhanyakude District Municipality and the Contractor to remove from site, eliminate, terminate, mitigate, and rectify the condition. If remedial action is not implemented within the agreed term, uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative has the right to stop work forthwith.

If the Contractor fails to take the necessary steps to cure that breach or violation promptly or to otherwise comply with this Clause, uMkhanyakude District Municipality may exercise its rights of termination according to the default provisions of this Contract or issue a fine to the Contractor to the value of R10,000.00 per offence.

Should uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative observe an unsafe act or become aware of a planned unsafe act, uMkhanyakude District Municipality or uMkhanyakude District Municipality's nominated Representative may direct the Contractor to cease, or not to proceed with, the unsafe work. The Contractor shall, at the Contractor's own cost and risk, modify its Method of Work in order to work safely.

5.14 Safety Conflict

Where any conflict exists between the requirements of this Annexure, the Site Rules or Statutory Requirements/Regulations the higher standard shall apply unless such conflict is brought to the attention of uMkhanyakude District Municipality, or uMkhanyakude District Municipality's nominated Representative and a direction provided. The Contractor is deemed to have allowed for the higher standard.

The Contractor is legally responsible for ensuring that he conforms to all applicable aspects of the Occupational Health & Safety Act 85/1993 and Regulations (OH&S Act) and other relevant Acts and Regulations. If in dispute with uMkhanyakude District Municipality's specification and or foreign legislation, the most stringent requirement shall apply for all uMkhanyakude District Municipality controlled project/ sites.

6. Annexures

Annexure 1 - Risk Assessment Record.

Annexure 2 - Safety Method Statement Form.

Annexure 3 - Daily Safe Task Instruction Form (DSTI).

Annexure 4 - Safety File Checklist.

Annexure 5 - Visible Felt Leadership (VFL).

Annexure 6 - Fall Protection Plan Check Sheet.

Annexure 7 - Planned Task Observation (PTO).

Annexure 8 - Health and Safety Plan Check Sheet.

Annexure 9 - Health and Safety Bill of Quantities (BOQ)

Annexure 10 - Hazardous Biological Agents Prevention and Control Management Plan.

Annexure 11 - OHS Audit Corrective Action Report

Annexure 12 - End of Project Documents



7. Contractor's Acceptance & Acknowledgement of the Health & Safety Specification:

Section 16.1 /16.2 declaration:

I, _____ (print name in full), the
undersigned responsible person (Contractors 16.1/16.2 Appointee) for: _____
_____ (Company Name) declare that
I have read, understood and accept the responsibilities and requirements of this Health & Safety
Specification for the project: Manguzi Star of the Sea Zone 7B.

I will ensure that this Site-Specific Health & Safety Specification is communicated to the relevant
parties so that the requirements hereto can be complied with.

Contractor's Responsible Person
(16.1/ 16.2 Appointee)

Date

Construction Manager CR8(1) declaration:

I, _____ (print name in full), the
undersigned responsible person (Construction Manager CR8(1) Appointee) for:
_____ (Company Name)
declare that I have read, understood and accept the responsibilities and requirements of this
Health & Safety Specification for the project: Manguzi Star of the Sea Zone 7B.

I will ensure that this Site-Specific Health & Safety Specification is communicated to the relevant
parties so that the requirements hereto can be complied with.

Contractor's Responsible Person
(Construction Manager CR8(1))

Date

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	RISK ASSESSMENT RECORD	Revision	00
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RA NO:		DATE:	
CONTRACTOR:		LOCATION:	
SUB-CONTRACTOR:		START DATE:	
CONTRACT NUMBER:		END DATE:	
BRIEF DESCRIPTION OF WORK/ACTIVITY:			

RISK ASSESSMENT TEAM:					
Initials & Surname	Principal Contractor	Signature	Approved (if applicable):		YES NO
	CR8(1) Appointee		Client - Resident Engineer:		
	CR8(7) Appointee		Signature:		Date:
	CR9(1) Risk Assessor		Comments:		
	CR8(5) Safety Officer				
			Client – Pr.CHSA/ CHSM:		
			Signature:		Date:
Sub-Contractor (Where Applicable)			Comments:		
	CR8(7) Appointee				

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REQUIRED AND EXISTING CONTROL MEASURES: (SUBMIT AND ATTACH TO RISK ASSESSMENT)	AVAILABLE		ADEQUATE		REMARKS
	Yes	No	Yes	No	
Scope of Work (Logical steps on how task / work will be performed)					
Procedures: (WI / SOP / Vendor Spec)					
Training (induction) / Competency certificates? Specific training identified / other (instructions)					
Special permits required (specify)					
Equipment / Tool Registers / Others (specify)					
Code of Practice:					
Other:					

FREQUENCY SCALE	SEVERITY SCALE	PROBABILITY SCALE
Frequent occurrence / daily (3)	Catastrophic (Many fatalities / > 10 Million damage) (8)	Has happened before (3)
It has happened / monthly (2)	Disaster (Fatal injury / > 1 Million damage) (7)	Quite possible (2)
Could occur / yearly (1)	Very Serious (Reportable Accident / > R100,000 damage) (6)	Unusual but possible (1)
	Serious (Disability Injury (LTI) / > R100,000 damage) (5)	
	Important (Non-disabling Injury / > R1,000 damage) (4)	
	Of Concern (Minor injury / > R100 damage) (3)	

RISK RANKING / PRIORITY FACTOR		
If score is 61 to 72	AA	Potentially Catastrophic – action needed immediately.
If score is 49 to 60	A	Potentially Major – action to be taken within 24 hours.
If score is 37 to 48	B	Potentially Serious – action to be taken within 48 hours.
If score is 01 to 36	C	Potentially Minor – action to be taken within 7 days.

logo	Health, Safety and Environmental Management System	HIRA No:	001
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I, _____, the undersigned responsible person (CR8(1) Construction Manager) for the area related to this Risk Assessment hereby declare that I have explained and ensured understanding of the hazards associated and the necessary precautionary measures that need to be taken with the area and work that is going to be done to the appointed responsible Supervisor/Foreman.

Responsible Person
CR8(1) Construction Manager

I, _____, the undersigned responsible person (CR8(7) appointee) hereby declares that:

- I have after **consultation with my employees**, as far as reasonably practicable, **identified and recorded all the significant hazards and risks** associated with the task that I am to perform with regards to this Risk Assessment.
- I have **determined all measures that needs to be in place** for this task, including changing the organisation of work and design of safe systems of work, necessary to eliminate, control, minimise, or where the risk still remains, provided the necessary personal protective equipment, **and implemented them**.
- I undertake to **periodically review the hazards identified and the risk assessed**, to determine whether further elimination, control and minimisation of risk are possible.
- I have **provided every employee** as part of this risk assessment **with the necessary training, information, instruction or supervision** to enable them to perform their work without risk to his/her Safety and Health.

Signed on _____ (date) at _____ (location)

Employed by _____ (name of company),

Responsible Person
CR8(7) Appointee

logo	Health, Safety and Environmental Management System	HIRA No:	001
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I / we, the undersigned, hereby declare that the responsible person in charge has made us familiar with the work-related hazards and risk and the measures that must be taken to eliminate, control and minimise those hazards and risks:

[illegible]

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	SAFETY METHOD STATEMENT	Revision	00
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Task			
RA Number			
Project			
Client			
Consultant			
	Subject Matter Expert/ CR8(1)	Client's PrCHSA/CHSM	Client's Resident Engineer
Name:			
Signature:			
Date:			

No	LIST SEQUENCE OF ACTIVITIES	HAZARD		RISK	
		Yes	No	Yes	No
1.	Planning				
1.1	Mobilize crew to site.		X		X
1.2	Notify land owner/ client of arrival on site.		X		X
1.3	Conduct tool box talks, site awareness, issue PPE.		X		X
1.4	Instruct staff on method study and risk assessment.		X		X
1.5	Ensure work area available and determine barricaded requirements.		X		X
2.	Inspection				
2.1	Inspect all Tools and record on registers.		X		X
2.2	Inspect all Equipment and record on register.		X		X
2.3	Set up SMI board.		X		X
2.4	Inspect all staff for correct PPE.		X		X
2.5	Inspect Barricading if present.		X		X
3.	Tasks				
3.1	Transporting material and tools to site. Deliver tools, material and personnel to site	X		X	
3.2					
3.3					
3.4					
3.5					
4	Close Out				
4.1	Packing and loading tools and equipment	X		X	
4.2	De-mobilize from site	X		X	

CONTRACTORS DAILY SAFE TASK INSTRUCTION (CHECKLIST - BEFORE WORK COMMENCES)

COMPANY:			AREA:	
			DATE:	
DESCRIPTION	TO STANDARD		CORRECTIVE MEASURES	DATE
	YES	NO		
Safe access to work area – clean & tidy				
COVID-19 Requirements Complied with				
Sufficient / correct barricading erected				
Electrical equipment in good condition				
Machine guarding adequate				
All tools / equipment pre-inspected				
Safe access & egress available and used				
Scaffolding tagged accordingly				
Gas cutting equipment & hoses				
Correct P.P.E (Utilised & available)				
Safe working platforms for elevated work				
Safe Lifting & Rigging equipment				
SMI board up to date				
Correct PERMITS for application				
PERMITS VALID				
LOCK –OUT REQUIRED AND IN PLACE?				
CORRECT TOOLS & EQUIPMENT AVAILABLE				
NO OVERHEAD WORK ALLOWED				
The above list does not exclude and or wave any other checklist and or legal requirements!				
RISK ASSESSMENT REFERENCE NUMBER:				
TOOL BOX TALK TOPIC:				
CURRENT JOB - LIST MAIN STEPS OF TASK?	WHAT ARE THE HAZARDS – JOB & ENVIRONMENT?		LIST CONTROLS REQUIRED\ IMPLEMENTED?	

Note:

- If tasks change, this list and the Risk Assessment must be revised before proceeding with new/changed task.
- A signed attendance register must be attached to this list.

I hereby certify that the above items were checked and all workers under my supervision received a safe task instruction:

Responsible Person:
(Foreman/Supervisor) Print Name _____ Signature: _____

CHSM/CHSO (Contractor) Print Name _____ Signature: _____

DSTI CLOSE-OUT (CHECKLIST – AT END OF SHIFT)

NO	DESCRIPTION	YES	NO	ACTION REQUIRED
1	Are safe access to work area reinstated			
2	Sufficient and correct barricading erected where required – no floor openings			
3	No tools and equipment left at work place			
4	All tools and equipment inspected end – shift inspection / hot work inspection			
5	Scaffolding tagged accordingly			
6	No gas cutting equipment left at work place			
7	End shift PPE inspection			
8	All material removed from elevated working platforms			
9	Lifting & Rigging equipment correctly stored			
10	Applicable permits signed off			
11	Lock-outs applied with all plant and equipment left at work place			
12	Material neatly and safe stacked At work place / store			
13	Housekeeping in good state			

REMARKS:

Note:

- If tasks change, this list and the Risk Assessment must be revised before proceeding with new/changed task.
- A signed attendance register must be attached to this list.

I hereby certify that the above items were checked IN MY AREA/S of RESPONSIBILITY and the area/s is safe and free of any possible hazards

Responsible Person:

(Foreman/Supervisor) Print Name _____ Signature: _____

Safety Officer (Contractor) Print Name _____ Signature: _____

DSTI Communication Register

Name	Sign

Name	Sign

Communicated By: _____ Sign: _____

Position: _____ Date: _____

SAFETY FILE REQUIREMENTS

(To be submitted to the Clients H&S Consultant at least 10 working days prior to arrival on site)

		Yes	No	Comments
1.	Notification of Construction Work to the Department of Labour: Document to display required information as per OHS Act No. 85 of 1993 – Construction Regulations Annexure A Must carry the stamp of acceptance from the Department of Labour (N.B. Proof of Fax not accepted, must be stamped).	N/A	N/A	
2.	Construction Work Permit in file as per CR3(6) (only applicable when CR3(1) is applicable to the project).	✓	✗	
3.	Valid Letter of Good Standing with FEMA/WCA. Include proof of relevant insurances to carry out work (e.g.: Legal Liability Insurance Certificate).			
4.	Organogram of Reporting Structure: This document must provide all persons appointed in terms of OHS Act No. 85 of 1993 Including contact details. (rev, date, approval)			
5.	Policy Documents:			
	Contractor Health & Safety Policy			
	Contractors Environmental Policy			
	Hazardous Biological Agents (HBA) Policy for COVID-19			
	Substance Abuse Policy.			
	HIV & AIDS Policy.			
	Smoking in the Workplace Policy Statement.			
6.	Principal Contractors Approved Health & Safety Plan correlating with Clients Site Specific Health & Safety Specification (SSHSS).			
7.	Contractors Environmental Management Plan (EMP) correlating with Clients Environmental Specification.			
8.	HBA Prevention & Control Management Plan for COVID-19			
9.	Waste Management Plan & Waste Management Procedure (May be included in EMP).			
10.	Fall Protection Plan (FPP): Should refer to separate FPP File and to be reviewed separately according to the Fall Protection Plan Check Sheet.			
11.	Contractors Site Specific Emergency Plan.			
12.	Site Specific Emergency Contact Numbers.			
13.	List of Sub Contractors to be used (if any sub-contractors are to be used).			
14.	Section 37(2) mandatory agreements between client - contractor and contractor - sub contractor: • 37.2 & 5(1)(k) Agreement with Mandatory (Client to Principal).			
	• 37.2 & 7(1)(c)(v) Agreement with Mandatory (Principal to Sub Contractor).			

15.	Fully completed Appointments (in line with CR2014) of the following but not limited to:			
	• Legal Appointment Register			
	• 16.1 - CEO Resolution of Responsibility Declaration Letter.			
	• 16.2 - Delegated Authority			
	• CR8(1) - Construction Manager			
	• CR8(2) - Assistant Construction Manager			
	• CR8(7) - Construction Supervisor			
	• CR8(8) - Assistant Construction Supervisor			
	• CR8(5) - Construction Safety Officer			
	• CR9(1) - Risk Assessor			
	• GAR9(2) - Incident Investigator			
	• CR10(1)(a) – Fall Protection Planner			
	• CR12(1) - Temporary Works Designer			
	• GSR3(4) - First Aid Officer			
	• CR29(i) - Fire Marshal			
	An abbreviated CV and ID of the above appointed persons shall be attached to the appointment.			
	Safety Officer/Construction Manager's SACPCMP Registration.			
	Competency Certificates for safety training courses will also be attached as required in specifications.			
	All other Relevant Appointments as per scope of work.			
	Competency certificates/licences where applicable are to be attached to the appointment.			
	Appointments for all nominated responsible person to conduct monthly inspections on tools and equipment and proof of their competency are required.			
16.	Proof of fire fighting training & list of fire fighting team members. (For smaller projects, only required if hot works is to be conducted. Required on larger projects).			
17.	Detailed Job Category List, including competency training requirements per job category (aligned with CLIENTS minimum requirements) & PPE needs analysis per job category. (For larger projects only).			
18.	Risk Assessment (HIRA) & Safety Method Statement (SMS):			
	HIRA & SMS Register (this should detail submitted risk assessments with a tick and signature column to detail status of HIRA's and SMS's. i.e. approved or declined).			
	Baseline Risk Assessment indicating the full scope of work and risk profile - High risk task inventory registers to be attached.			
	Task Specific HIRA & SMS or initial tasks (Note: Before establishment Principal Contractor must supply what they will start with – Site Establishment, Fencing, Clear & Grub, etc.			
	SWP/SOP/Guidelines (To be generated for each specific task to be performed on the project and submitted for approval).			
19.	3 Week look-a-head plan (rolling horizon). First 2 months risk assessment submission schedule. (not required if all Risk Assessments submitted)			

20.	Copy of Induction Register and Contractors Induction Material.			
21.	Copy of Daily Safe Task Instruction (DSTI).			
22.	Copy of Tool Box Talk Register and Tool Box Talks.			
23.	Tool & Equipment Registers, Provide copies of:			
	Tools and Equipment Inventory List.			
	All relevant Inspection Registers for equipment tool and plant to be used.			
	Proof that issue register system is in place for PPE. (PPE issue record to be attached to PPE Inspection Record to form a PPE pack...One PPE pack per person on site).			
	All other statutory registers as required by the OHS Act No. 85 of 1993.			
24.	Site Logs, Provide a copy of:			
	Visitor Register.			
	Complaints Register			
	Site Diary			
25.	Template of Health & Safety Minutes to be used on site.			
26.	Template Copy of Contractors Audit Document to be used on the project.			
27.	Copy of Contractors Vehicle List to detail all vehicles to be used on site (Where applicable).			
28.	Incident Management/Reporting:			
	Contractors Incident Flow Chart and Procedure.			
	Contractors Incident Flash Report Template.			
	Contractors Full Incident Investigation Report Template.			
	Annexure 1 Form			
	WCL Forms: WCL.1(e), WCL2, WCL3, WCL4, WCL5, WCL6, WCL14, WCL22, WCL26 as required by the OHS Act No. 85 of 1993.			
29.	Copies of valid Medicals Certificates of Fitness conducted by an occupational medical practitioner inline with their job description and tasks to be preformed on site. Each medical must be accompanied by a completed and stamped Annexure 3 document (for each and every person on site).			
30.	MSDS Register and MSDS documents for materials/chemicals, etc on site. (Where applicable).			
31.	Copy of reference documents:			
	• Signed copy of the Clients Site Specific Health & Safety Specification (SSHSS). Including a signed register of communication to Managers, Supervisors & Safety Officers.			
	• Signed copy of the Clients Environmental Specification. Including a signed register of communication to Managers, Supervisors & Safety Officers (Where available).			
	• Up-To-Date version of the Occupational Health & Safety act 85 of 1993 to be kept on site.			
	• Copy of all relevant Acts & Regulations (e.g. Construction Regulation 2014, General Safety Regulations, COID Act, Basic Conditions of Employment Act, National Road Traffic Act, etc) to be kept on site.			

On approval of the above mentioned file, contractors will be allowed to mobilise to site. Within four weeks of mobilisation to site, a Baseline Health & Safety Compliance Audit will be conducted and thereafter as specified.

Contractor:
 Site:
 Inspected By: N.W Atkinson
 Date:

Health & Safety File Approval				
Site Name:				
Contractor:				
Contractors Safety Officer Name:				
Contractors Safety Officer Contact Details:				
H&S File Submitted on:				
H&S File Inspection Number:		01		
H&S File Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:	N.W Atkinson (CHSM/330/2017)			
Sign:		Date:		
Reviewed by:	R.W Atkinson (CHSA/027/2015)			
Sign:		Date:		

VFL

(Visible Felt Leadership)

Site Safety Inspection:

(Complete at least one Incident-Group, with it's Specific-Agencies, per inspection and note details of deviation and corrective action on back page.)

Name: _____
I am: Safety____, Supervisor____, Management____. (Tick correct)
Date: _____
Company: _____
Project Name: _____

Incident-Groups	Specific-Agencies	Observation			Incident-Groups	Specific-Agencies	Observation		
		N/A	X	✓			N/A	X	✓
Access & Egress	Uneven/Slippery Surface				Barricading	Erected			
	Safe Access Provided					Maintained			
	Site Access Control					Correct type			
Area Made Safe	Work's made safe				PPE	Used/ Used Correctly			
	Warning signs in place/maintained					In good repair			
	Hazardous work area demarcated					Stock available			
Mobile Plant	Pre-Start inspections				Elevated Work	Tied/ Safe platform			
	Flagman Available					Harness/ Safety belt used			
	Faults					Lifeline in place & used			
	Reckless driving/ speeding					Tools & equipment secured			
	Transporting people/ materials safely					Ladder safe/ correctly positioned			
Lifting & Rigging	Rigger/ Banksman				Lock out/ Isolation/ Permits	Done/ Proof (Electrical/ Mechanical)			
	Lifting tackle (Used/ Condition)					Vehicles switched off when unattended			
	Crane/ Crane Truck (Setup / Condition)					Occupations - Rail & OHTE			
Scaffolding	Tag in place/ signed & valid				Tools & Equipment	In good repair			
	Safe to Use					Used Correctly			
	Access Safe					FFE			
	Material condition/ Integrity					Hot Work Shields			
Stacking & Storage	No Unidentified Containers				Housekeeping	No Litter			
	Safe Stacking					Nails removed from timber			
	Correct Area					Waste Management controlled			
	Dunnage correct					No tripping hazards			
Management Condoning	HSE Documentation completed				Health & Hygiene	Facilities provided/adequate(Ablution/ eating, etc)			
	SMI board up to date					Facilities kept clean			
	Correcting unsafe Behaviour/ Conditions					Sanitation			
	Adhering to requirements					Biological hazards identified and controlled			
Manual Handling	Repetitive Motion				Environmental	No Spills/ Spills controlled			
	Correct Manual Handling/ Lifting					Hazardous materials id/ controlled (eg.Asbestos)			
	Limited to 25kg/ 1/3 body mass					Dust Controlled			
Perway Activities	Level crossings/ spiking					Spill prevention measures in place (eg.Drip trays)			
	Flagmen/ Banners				Water Environment	Awareness program in place			
	OHTE					Diving			
Other						Dredging			
						Working on Barges			

Person who conducted inspection validation (sign):

Reviewed by CR8.5/16.1/16.2 - Name:

Sign:

Date:

		Interventions - Substandard inspection findings as noted on first page, please elaborate on deviation/ at-risk behaviour observed.					
Date	Time	Company	Area	Description of Incident	Action Taken/ Preventative Measures	Closed Out By:	Date Closed
		Commendation - Safe acts observed/ Worker instructing colleague to correct at risk behaviour/ Workers correcting unsafe condition without being asked.					
Date	Time	Company	Details of Commendation				

FALL PROTECTION PLAN (FPP) CHECK SHEET

(To be submitted to the Clients Safety Consultant for approval before work from a fall risk position is granted. The order of the FPP must follow this check sheet)

		Yes	No	Comments
Fall Protection Plan/Policy Document:				
1.	<u>Cover Page Requirements:</u> Company Name. Project/Site Name. Document Date. Revision Number. Physical Address of Company. Physical Address of Site. Designated 16.1/16.2: Name, contact details, signature, signature date. Fall Protection Planner CR10.1a: Name, contact details, signature, signature date. Document Compiled By: Name, contact details, signature, signature date. Client Approval: Name, contact details, signature, signature date. <u>Document Format:</u> Header: Company Name and Project Name as minimum (Company Logo advisable). Footer with: Document Number, Revision Number, Document Date and Page Number as a minimum.	✓		
			X	
2.	<u>Document Control Page, Table Consisting of Columns for:</u> Revision Number. Section Number. (to record section number that has been changed) Required By. (To enter details of why the change was required). Description (brief outline of changes) Date. Previous Document Authorisation Date. Previous Author/Document Compiler (Name & contact details).			
3.	<u>Table of Contents Page:</u> With Section Numbers, Section Names and Page Numbers for each section.			
4.	<u>Scope:</u> Must details the companies reason for drafting the FPP. (I.e. the identify and evaluate all risks from working in a fall risk position, to identify need to correct procedures and method, etc) Must detail that the FPP is to be implemented and complied with by all divisions of the company and their sub-contractors which are required to work in a fall risk position.			
5.	<u>Introduction:</u> Company must recognise the inherent dangers of performing work in a fall risk position and must details its commitment to controlling the risks.			

Contractor:
Site:
Inspected By:
Date:

		Yes	No	
	Must detail that the plan will comply and analyse requirements of the OSH Act 85 of 1993 and any Relevant Regulations, applicable national and international standards and Industry recognised standards of good practice.			
	Must detail that the plan will be designed to protect employees under fall risk conditions in line with Construction Regulations (CR10).			
	Must detail that the company will strive to follow applicable national and international best practices.			
	Must detail what the fall risk work being conducted on site will be. (i.e. Ladder work, Roof work, MEWPs, Scaffolding, etc).			
	Can make statement of commitment to purchase legislation to ensure compliance.			
	Must detail that precautionary measures and guidance within FPP will be implemented each and every time work is conducted in a fall risk position.			
	Must detail what the FPP will include: Document Review and Amendments, Worksite Information & Method Statement, Risk Assessment, Designations / Legal Appointment Forms, Training Management, Employee Health Management, Work at Height Equipment Management, Standard Operating Procedures, A Rescue Plan, Emergency & Rescue Procedures, and Communication Declaration & Communication Register.			
6.	<u>Work Site Information must address:</u> Permit to do construction Work (Annexure 1) / Notification of Construction Annexure 2).			
	Detailed what Contact Information will be required? (i.e. work site management, emergency services in local area, etc).			
	What Work Site Contact Information is required. (i.e. Site Management and emergency contact details).			
	What Work Site Location Information is required. (i.e. site name, address, gps coordinates, etc			
	Operation Planning & Method Statement.			
	Applying Work Site Information to the Fall Protection Plan.			
7.	<u>Risk Assessment must address:</u> Construction Regulation 9.1 requirements (i.e. How will you use work site information to design / determine the rest of the fall protection).			
	Qualification and Competency of Risk Assessor. (i.e. What does CR 9.1 say about a risk assessor, and how will you meet this requirement?)			
	Design and layout of Risk Assessment (i.e. identify the requirements for a risk assessment from CR 9.1 and 9.2 and state these requirements to form a part of the risk assessment).			
	Baseline Risk Assessment (i.e. Relevance of a base line risk assessment?).			
	Clients Baseline Risk Assessment & Work Site Induction. (i.e. Interpret CR 5.1(a) and CR9.4 and state how you will consider the client's baseline risk assessment and induction training? What will you do with the records?)			
	Site Risk Assessment & Toolbox Talks (i.e. Who will compile the site-specific risk assessment? Who will communicate it and how? What must happen if it is updated?).			
	Monitor & Review Risk Assessment (i.e. Who will monitor the site for changes in the risk profile. When will the risk assessment be reviewed).			

Contractor:
Site:
Inspected By:
Date:

Yes No

8.	<u>Appointments/Designations must address::</u> Fall Protection Plan Management Appointments Required Specific to the Project (i.e. State the duties of all required designations in terms of this Fall protection Plan).			
	<u>Compulsory Fall Protection Plan Designations:</u>			
	16.1 Designation			
	16.2 Designation			
	Fall Protection Planner: CR10(1)(a)			
	Risk Assessor: CR9(1)			
	Site Manager: CR8(1)			
	Site Supervisor: CR8(7)			
	Fall Arrest Rescue Coordinator: CR10(2)(e) and/or			
	Basic Fall Arrest & Rescue Worker: CR10(2)(e) (Dependant on Tasks to be performed).			
	First Aid Officer: GSR 3(1) & 3(4)			
	Incident Investigator: GAR9(2)			
	Fall Protection Officer: CR10(1)(b)&(c)			
	<u>Variable Fall Protection Plan Designations:</u> (Variable means it will be required depending on site specific operations)			
	Assistant Site Manager: CR8(2)			
	Assistant Site Supervisor: CR8(8)			
	Safety Officer: CR8(5)			
	Fall Protection Equipment Inspector/Controller: CR10(2)(d).			
	Basic Fall Arrest Worker/Operator: CR10(2) & 10(4)(b).			
	Rope Access Supervisor: CR18(1)(a)			
	Rope Access Technician/Operator: CR18(1)(c)			
	Rope Access Practitioner: CR18(1)(c)			
	Rope Access System Designer: CR6 & CR18(2)(a)			
	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: CR23(d)			
	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: CR23(d)			
	Scaffolding Supervisor: CR16(1)			
	Scaffolding Team Leader: CR16(1)			
	Scaffold Erector: CR16(1)			
	Scaffold Inspector: CR16(1)			
	Designer: CR6(1), 6(2) & 12(1)			
	Temporary Works Designer: CR6(2) & 12(1)			
	Suspended Platform Supervisor - CR17(1) & 17(10)			
	Suspended Platform Erector - CR17(1) to 17(7)			
Suspended Platform Operator - CR17(1) & 17(12)				
Suspended Platform Inspector - CR17(1), 17(9)(10)(11)				
9.	<u>Training Management:</u> (must detail relevant SAQA Unit Standards/ Other Qualifications Required where possible).			
	Competent Person definition as per CR1 to be explained.			
	Fall Protection Planner: US 229998 & 229994			
	Risk Assessor: HIRA US116520 or equivalent			
	Fall Arrest Rescue Coordinator: US 229995; 230000; 229999			
	Basic Fall Arrest & Rescue Worker: US229998 & 229995			
	First Aid Officer: Level 1 or higher accredited course.			

Contractor:
Site:
Inspected By:
Date:

Yes No

	Incident Investigator: Should have fall arrest training and Incident Investigator Certificate (e.g. RCAT, etc).			
	Fall Protection Officer: Relevant Fall Arrest/Rope Access/etc Training as per site operations being performed.			
	Safety Officer: SAMTRAC or NEBOSH Certificate with SACPCMP Registration as CHSO (Construction Health & Safety Officer) as minimum.			
	Fall Protection Equipment Inspector/Controller: Must be Specific to Equipment Used, Supervisor Level required.			
	Basic Fall Arrest Worker/Operator: US229998			
	Rope Access Supervisor: US229998, 230000, 229996, 229997 & 230001.			
	Rope Access Technician/Operator (Level1): US229998 & 230000.			
	Rope Access Practitioner (Level2): US229998, 230000 & 229996.			
	Rope Access System Designer: US229998, 230000 & 229996 and other relevant Institute for work at heights (IWH) or NQF unit standards as per system to be designed.			
	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: US 243272 & 229998 or IWH-PB NNQF 201303(Basic Fall Prevention Programme for MEWP Practitioners).			
	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: US 243272 & 229998 or IWH-PB NNQF 201303(Basic Fall Prevention Programme for MEWP Practitioners).			
	Scaffolding Supervisor: US 263224			
	Scaffolding Team Leader: US263245			
	Scaffold Erector: US 263245			
	Scaffold Inspector: US 263205			
	Suspended Scaffolding: US 116690			
	Designer: The relevant training/ qualification may include, but is not limited to: - Fall arrest Technician: 229998, 229995 - Fall Arrest Rescue Coordinator: 229995; 230000; 229999 - Manufacturer product training - Relevant standards training. - Mechanical or structural engineering.			
	Temporary Works Designer: SAQA or Equivalent NQF unit standards as per temporary works to be designed.			
	Suspended Platform Supervisor: US 243271			
	Suspended Platform Erector: US 243271			
	Suspended Platform Operator: US 243271			
	Suspended Platform Inspector: US 243271			
	<u>Work Site Induction Training: Must detail when training is required and what is its relevance in the FPP.</u>			
10.	<u>Health Management:</u> <u>Section must detail:</u> Why is it applicable to work at height? How will the company meet this requirement? Period medical is valid for.			
11.	<u>Equipment Management:</u> Relevance of CR10.2(d) must be explained. Relevance of CR10.4(c-i) must be explained. Detail that an equipment inventory will be kept, what the use of the equipment inventory is and how it will be managed. Detail that a Booking in and out form system will be used,			

Contractor:
Site:
Inspected By:
Date:

Yes No

	why it is important & where copies will be kept for equipment management and use on site.			
	<u>Long Term Inspection Records should detail:</u> - Inspection period (usually every 3 months) - According to what standard will the period be determined (Usually DMR 18.10(e)) - What equipment must be included in the inspection. - Where the inspection records be kept.			
	<u>Pre-Use Inspection Records should detail:</u> - How often must this happen. (Inspected Before Use) - Who must do the inspection. (Inspected by the user) - What equipment must included in the inspection. - Where the inspection records be kept.			
	<u>Suspect Equipment Management:</u> - Should Detail what the procedure should be followed if suspect equipment is found (damaged/ suspected to be damaged or compromised in any way). - Impact on inventory stock should be considered as well.			
	<u>First Aid Box should detail:</u> - Why it is important to check the first aid box. - Who is responsible for checking the first aid box.			
12.	Operating Procedures: Statement regarding how CR10(4) will be complied with.(can include CR10(4) extract).			
	Statement regarding how CR10(5) will be complied with.(can include CR10(5) extract).			
	Fall Arrest Procedures must: - Name relevant sources of information on standard operating procedures. - Mention how this information will be applied in fall protection planning. - Detail that Fall Arrest Procedure Information might not be kept in the fall protection plan. - Detail where relevant information will be stored.			
13.	Emergency Procedure: Statement regarding how CR10(2)(e) will be complied with.(can include CR10(2)(e) extract).			
	Fall Arrest Rescue Procedures: Site Specific Fall Arrest Rescue Plan to detail - What it will be based on. - Where the rescue plan will be kept.			
	Fall Arrest Rescue Procedures: General Rescue Procedure sources may include but are not limited to. Must detail: - What sources will contain standard rescue procedures (i.e. manufacturer recommendations, training manuals, industry best practices, company specific developed training procedures, client operating procedures, etc). - These records must be kept as part of the fall protection plan.			
	Rope Access Rescue Procedures: Site Specific Rope Access Rescue Plan to detail: - What it will be based on. - Where the rescue plan will be kept.			
	Rope Access Rescue Procedures: General Rope Access Rescue Procedure sources may include but are not limited to. Must detail: - What sources will contain standard rescue procedures (i.e. manufacturer recommendations, training manuals, industry best practices, company specific developed training procedures, client operating procedures, etc). - These records must be kept as part of the fall protection plan.			
	First Aid Attention (must detail what the procedure is for applying first aid).			
	Emergency Services, must detail: The types of relevant emergency services to be contacted.			

Contractor:
Site:
Inspected By:
Date:

Yes No

	- Where the contact information will be kept (emergency list). - When the emergency list should be compiled (before establishing site and that is must be included in the work site information). - When to call the relevant emergency services.			
	Incident reporting, must detail: - Compliance with the requirements of: - OHS Act 85 of 1993 section 24.1. - General administrative regulations 8 - General administrative regulation 9 - COID Act 130 of 1993 - Statement interpreting these requirements and stating how the requirements will be met. - Who will be responsible for reporting incidents and to who.			
14.	<u>Review and Amendments:</u> Interpret CR10(1)(b) and make a statement regarding how it will be complied with (can include CR10(1)(b) extract). Interpret CR10(3) and make a statement regarding how it will be complied with (can include CR10(3) extract). Review and Amendment, must detail: - When and Why a Fall Protection Plan must be reviewed. - Where the changes will be kept. - Who must review and sign off on the amendments. Implementation of Updated Information, must detail: - How the new info will be implemented. - Who will implement it? - With what (e.g. Verbal Communication with attendance register, via toolbox talks topic, etc).			
Fall Protection Appointments (Only look for Relevant Appointments as per Scope Of Work, Signed & Dated with Copy of ID & CV where required):				
15.	<u>Compulsory Fall Protection Plan Designations:</u>			
16.	16.1 Designation			
17.	16.2 Designation			
18.	Fall Protection Planner: CR10(1)(a)			
19.	Risk Assessor: CR9(1)			
20.	Site Manager: CR8(1)			
21.	Site Supervisor: CR8(7)			
22.	Fall Arrest Rescue Coordinator: CR10(2)(e) and/or			
	Basic Fall Arrest & Rescue Worker: CR10(2)(e) (Dependant on Tasks to be performed).			
23.	First Aid Officer: GSR 3(1) & 3(4)			
24.	Incident Investigator: GAR9(2)			
25.	Fall Protection Officer: CR10(1)(b)&(c)			
26.	<u>Variable Fall Protection Plan Designations:</u> (Variable means it will be required depending on site specific operations)			
27.	Assistant Site Manager: CR8(2)			
28.	Assistant Site Supervisor: CR8(8)			
29.	Safety Officer: CR8(5)			
30.	Fall Protection Equipment Inspector/Controller: CR10(2)(d).			
31.	Basic Fall Arrest Worker/Operator: CR10(2) & 10(4)(b).			
32.	Rope Access Supervisor: CR18(1)(a)			
33.	Rope Access Technician/Operator: CR18(1)(c)			
34.	Rope Access Practitioner: CR18(1)(c)			
35.	Rope Access System Designer: CR6 & CR18(2)(a)			
36.	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: CR23(d)			
37.	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: CR23(d)			

Contractor:
Site:
Inspected By:
Date:

Yes No

38.	Scaffolding Supervisor: CR16(1)			
39.	Scaffolding Team Leader: CR16(1)			
40.	Scaffold Erector: CR16(1)			
41.	Scaffold Inspector: CR16(1)			
42.	Designer: CR6(1), 6(2) & 12(1)			
43.	Temporary Works Designer: CR6(2) & 12(1)			
44.	Suspended Platform Supervisor - CR17(1) & 17(10)			
45.	Suspended Platform Erector - CR17(1) to 17(7)			
46.	Suspended Platform Operator - CR17(1) & 17(12)			
47.	Suspended Platform Inspector - CR17(1), 17(9)(10)(11)			

Specific Work Site Documentation:

48.	Organigram, detailing: - All Relevant Designations - Signed by 16(1)/16(2)			
49.	Method Statements (Including Drawings/Photos/ Diagrams of how the task is to be done)			
50.	Operation Plan, Detailing: - Team Members Names, Contact Details and Designation - Work Site Description - Equipment Requirements - Areas of concern - Prepared by: Name, Sign & Date			

Work At Height Risk Assessment

51.	Front Page with the following details: - RA Number - Date - Contractors Name - Location - Sub-Contractors - Start & End Date - Brief Description of activity (e.g. Fall Protection RA). - Risk Assessment Team (Names & Signatures of Relevant People): 16(1) or 16(2) - CR8(7) - CR8(8) - CR9(1) - CR8(5) - CR10(1)(a) - Client Approval Section (with space for Names, Signatures, Date, Accepted Yes/No and Comments). - Principle Contractor Approval section (if Applicable).			
52.	Required and Existing Control Measures including: - Table detailing available and adequate Yes No columns for: - Scope Of Work - Procedures (SOP, guidelines, etc) - Special Permits (where required) - Equipment/ Tool Registers / Other - Codes of Practice - Table detailing workings for Risk Ratings/ Ranking & Priority Factors. Must include: - Frequency Scale - Severity Scale - Probability Scale - Total combine rating explanation.			
	Risk Assessment to have identified: - Tasks - Hazards - Risks - Risk Ratings (Probability, Severity, Frequency, total score and Risk Ranking) - Preventative Measures - Responsible Person Name and Signature area per task. - Declaration Page of communication signed by 16(1)/16(2) & CR8(7).			

Contractor:
Site:
Inspected By:
Date:

Yes No

	- Communication Register with names and signatures of all employees that the RA has been communicated to. - Footers of document to detail: Document number, Revision number, Date & Page Number.			
Training Certificates & Registers				
53.	Training Certificate Register with columns for: - Name - ID Number - Type of Training or Unit Standard - Date Certificate Issued - Date Certificate Expires - Signed by CR8(7) or CR8(5)			
54.	All Relevant Training Certificates to be placed in this section.			
Medical Certificate of Fitness to Work at Height				
55.	Medical Certificate Register with columns for: - Name - ID Number - Issued By - Medical Date - Medical Certificate Expiry Date - Signed by CR8(7) or CR8(5)			
56.	All Medical Certificates including completed, signed and stamped Annexure 3 forms to be placed in this section.			
Inspection Forms, Records & Pre-Use Inspection Register				
57.	Booking In & Out Forms			
58.	Pre-Use Inspection Forms			
59.	Equipment Inspection Forms (Weekly/Monthly)			
60.	Plant Inspection Forms (e.g. MEWPs)			
61.	Long Term Inspection Records/ Fit for Use Certificates (Manufacturer Certifications, or Proof of Recent Purchase, etc).			
Standard Operation Procedures Safe Operating Procedures				
62.	Standard Safe Operating Procedures to be placed in this section can include (but not limited to): - Equipment Marking & Storage - Fall Arrest Prevention - Fall Arrest - Rope Access			
Rescue & Emergency Safe Operating Procedures				
63.	Rescue Safe Operating Procedures to be placed in this section can include (but not limited to): - Site Emergency Contact Details - Rescue Information & Suspension Syncope - Scene & Patient Management - Rescue (multiple types of standard rescue covered). - MEWP Rescue (where required / specialist rescues as per scope of work).			
Communication Declaration & Communication Register.				
64.	Communication Declaration Page. - Declaration of communication by 16(1)/16(2) & CR8(7). - Communication Register with names and signatures of all employees that the FPP has been communicated to.			
<i>On approval of the above mentioned Fall Protection Plan (FPP), contractors will be allowed to mobilise their working at heights team to site to conduct work from a fall risk position so long as the work is inline with the contents of the approved FPP and approved Risk Assessments & Safety Method Statements. Regular inspections and audits will be conducted to ensure the FPP is being complied with.</i>				

Contractor:
 Site:
 Inspected By:
 Date:

Yes No

Fall Protection Plan Approval				
Site Name:				
Contractor:				
Contractors FP Planner Name:				
Contractors FP Planner Contact Details:				
FPP Inspection Number:				
Fall Protection Plan Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:				
Sign:		Date:		

DATE : _____ NAME : _____
 DEPARTMENT : _____ OCCUPATION : _____
 JOB OBSERVED : _____

Time on this job	Notification		Reason for observation
_____ years	Told in advance	Yes ☐ No ☐	Six Monthly observation ☐
	Not told	☐	New worker ☐
		☐	To determine if worker has learned to do job safely and effectively ☐

Is there a written standard procedure for this job ? Yes ☐ No ☐
 Did you get understanding & acceptance from the worker on doing this work ? Yes ☐ No ☐

Could acts / conditions observed lead to

- ☐ Reduced productivity
☐ Damage
☐ Injury

Loss potential

- ☐ Major
☐ Minor

- | | | |
|--|------------------------------|-----------------------------|
| 1. Are company Health & Safety rules complied with | Yes ☐ | No ☐ |
| 2. Is standard procedure for the job followed | Yes ☐ | No ☐ |
| 3. Is correct personal protective clothing used | Yes ☐ | No ☐ |
| 4. Is person physically fit for the job | Yes ☐ | No ☐ |
| 5. Environmental conditions (is there gas, smoke, heat, etc) | Yes ☐ | No ☐ |

Suggested remedies

Remarks

- | | | |
|-------|--|--------------------------|
| _____ | 1. Start procedure on this job | ☐ |
| _____ | 2. Revise present procedure | ☐ |
| _____ | 3. Different equipment – tools | ☐ |
| _____ | 4. Engineering revision | ☐ |
| _____ | 5. Retraining | ☐ |
| _____ | 6. Additional – better personal protection | ☐ |
| _____ | 7. Placement of worker | ☐ |

Signature : - Foreman : _____
 - Superintendent : _____
 - Manager / Engineer : _____

Observation conducted by	:	_____	Date	:	_____
Reviewed with employee	:	_____	Date	:	_____
Employees signature	:	_____	Co. No.	:	_____
Reviewed by : Supt / Eng / Manager	:	_____	Date	:	_____

Health & Safety Plan Check Sheet

		Yes	No	Comments
1.	<u>Cover Page Requirements:</u>	✓	✗	
	Company Name.			
	Project/Site Name.			
	Document Date.			
	Revision Number.			
	Physical Address of Company.			
	Physical Address of Site/ GPS Co-Ordinates.			
	<u>Designated 16.1/16.2:</u> Name, contact details, signature, signature date.			
	<u>Health & Safety Manager/ Officer (CR8.5):</u> Name, contact details, signature, signature date.			
	<u>Document Compiled By:</u> Name, contact details, signature, signature date.			
	<u>Client Approval:</u> Name, contact details, signature, signature date.			
	<u>Document Format:</u>			
	<u>Header:</u> Company Name and Project Name as minimum (Company Logo advisable).			
	<u>Footer with:</u> Document Number, Revision Number, Document Date and Page Number as a minimum.			
2.	<u>Document Control Page, Table Consisting of Columns for:</u>			
	Revision Number.			
	Section Number. (to record section number that has been changed)			
	Required By. (To enter details of why the change was required).			
	Description (brief outline of changes)			
	Date.			
	Previous Document Authorisation Date.			
	Previous Author/Document Compiler (Name & contact details).			
3.	<u>Table of Contents:</u> With Section Numbers, Section Names and Page Numbers for each section.			
4.	Scope			
5.	Introduction including: Project Description and Information			
6.	Definitions			

Contractor:
Site:
Inspected By:
Date:

7.	Objectives & Goals			
8.	Policy Statements			
9.	Responsibilities			
10.	Health and Safety Organisational Chart?			
11.	Management			
12.	Legal Requirements addressed?			
13.	Legal Appointments			
14.	Evacuation Planning & Emergency Contact Information			
15.	Emergency and Accident Management			
16.	Health and Safety Induction Training			
17.	Employee/Site Safety Rules			
18.	Medical Certificate of Fitness (Annexure 3) & Medical Surveillance			
19.	Hygiene and Welfare			
20.	Security - Access Control			
21.	Intoxication (Drug and Alcohol Abuse)			
22.	Hazardous Chemical Substances (HCS)			
23.	Stacking and Storing			
24.	Housekeeping			
25.	Fire Prevention & Provisions			
26.	First Aid & First Aid Provisions			
27.	Heat Stress			
28.	Transportation of Employees			
29.	Traffic Accommodation			
30.	Auditing (Internal and Sub-Contractor)			
31.	Work Observations / Inspections of work areas (DSTI's, VFLs, etc)			
32.	Toolbox Talks			
33.	Inspection Registers/Check Sheets (Tool& Equipment Lists and Checks)			
34.	Documentation Control: • Inspections • Incidents			

Contractor:
 Site:
 Inspected By:
 Date:

	- Records - Submission			
35.	Risk Assessments & Safety Method Statements			
36.	Safe Work Procedures (SWPs), Safe Operating Procedures (SOPs) & Guideline (GLs) Documentation.			
37.	Health and Safety Meetings			
38.	Health and Safety Committees			
39.	Training			
40.	Manual Handling			
41.	Mechanical Aids/ Plant			
42.	Equipment on Site including; Portable Electrical Equipment, Hand Tools, Machinery, etc			
43.	Personal Protective Clothing			
44.	Electrical Requirements including: Lock Outs of DBs, Temporary Electrical Installations, Electrical Installations, etc			
45.	Working at Heights/ Fall Risk Position Work Requirements: Fall Protection Plan, Fall Protection Planner (US:229994), Training Requirements, etc.			
46.	Health & Safety Specification: Is this H&S Plan in line with the Client's Site Specific Health & Safety Specification?			
47.	Site Signage.			
48.	Site Fencing & Barricading.			
49.	Performance, Review & Maintenance of the Plan detailed?			
50.	Communication Register.			
51.	<u>OTHER:</u>			

Contractor:
 Site:
 Inspected By:
 Date:



Health & Safety Plan Approval				
Site Name:				
Contractor:				
Contractors Safety Officer Name:				
Contractors Safety Officer Contact Details:				
Safety Plan Inspection Number:				
Safety Plan Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:				
Sign:		Date:		

PRINCIPAL CONTRACTORS NAME HERE**Health & Safety Bill of Quantities****Date:****Client:** uMkhanyakude District Municipality**Project Number:** TBC**Project:** Manguzi Star of the Sea Zone 6A

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (ZAR)
1	PPE:				
1.1	Hi Visibility conti-suit	Annual/ As required or needing replacing			R -
1.2	Hi- Visibility T-Shirts	Annual/ As required or needing replacing			R -
1.3	Steel Toe-Capped Safety Boots	Annual/ As required or needing replacing			R -
1.4	Hi-Visibility Safety Vest	Annual/ As required or needing replacing			R -
1.5	SABS Approved Hard Hat	Annual/ As required or needing replacing			R -
1.6	Hi-Viability Rain Suits	Annual/ As required or needing replacing			R -
1.7	Steel Toe Capped Gumboots	Annual/ As required or needing replacing			R -
1.8	Dust Masks (FFP2):	Annual/ As required or needing replacing			R -
1.9	Safety Glasses	Annual/ As required or needing replacing			R -
1.10	Gloves (Stipulate Type):	Annual/ As required or needing replacing			R -
1.11	Safety Harnesses (As per FPP)	Annual/ As required or needing replacing			R -
1.12	Other:	Annual/ As required or needing replacing			R -
2	Training:				
2.1	Safety Representative Training	Once Off			R -
2.2	First Aider Training	Once Off			R -
2.3	Fire Fighting Training	Once Off			R -
2.4	Legal liability	Once Off			R -
2.5	Incident Investigation	Once Off			R -
2.6	HIRA	Once Off			R -
2.7	Snake Awareness and Handling	Once Off			R -
2.8	Confined Space Entry	Once Off (If confined Space Required)			
2.8	Confined Space	Once Off (If confined Space Required)			
2.9	Other				R -
3	H&S Salaries:				
3.1	CHS Manager	Monthly			R -
3.2	CHS Officer	Monthly			R -
3.3	Other:	Monthly			R -
4	Specific H&S Items:				
4.1	OHS File	Once Off & regular updates (when required)			
4.2	Fall Protection Plan	Once Off & regular updates (when required)			
4.3	Medicals	Pre-placement, Annual & Exit			R -
4.4	Spill Kits	As required or needing replacing			R -
4.5	Accommodation of Traffic as per Client tender BOQ	As required			R -
4.6	Inductions	Annual			R -
4.7	First Aid Kits	Once off supply & restocking when used			R -
4.8	Fire Extinguishers	Once off supply & Annual Servicing			R -
4.9	Ablutions	Monthly			R -
4.10	Barrier Netting	As required or needing replacing			R -
4.11	Liquid Hand Soap	As required or needing replacing			R -
4.12	Snake Handling Kit	Once Off			R -
4.13	Third Party Qualification Verification	As Required (See Section 5.1.3.6 of the SSHSS)			R -
4.15	Confined Space Rescue Kit	Once Off (If confined Space Required)			R -
4.16	Other:				R -

5	<u>Safety Signage:</u>				
5.1	Construction Boards	As required or needing replacing			R -
5.2	Fire Extinguishers	As required or needing replacing			R -
5.3	Directional Signs	As required or needing replacing			R -
5.4	Emergency Assembly Points	As required or needing replacing			R -
5.5	No Smoking	As required or needing replacing			R -
5.6	Ladies and Men's Toilets	As required or needing replacing			R -
5.7	No Naked Flames	As required or needing replacing			R -
5.8	Confined Space	Once Off (If confined Space Required)			R -
5.9	Other:				R -
Total:					R0.00

Enter Name Here

Safety Officer CR8(5)

Enter Name Here

Construction Manager CR8(1)

Hazardous Biological Agents (HBA) Management Plan Checklist

The following checklist must be used to determine the requirements of the HBA : Work Resumption. This checklist was developed taking cognizance of the NICD, Department of Health and OHS requirements.

The points identified should be addressed by the plan and where not applicable shall be noted.

Item	Checklist item	Adequately Defined & Prepared		Comment
		Yes	No	
1	Document Design			
1.1	Document developer identified?			
1.2	Document specific number?			
1.3	Document revision number?			
1.4	Date of document approval?			
1.5	Document signed by 16.2/ CR 8.1?			
1.6	Pages numbered?			
2	Document Overview			
2.1	Reason for Plan/ Scope			
2.2	Reference documents			
2.3	Workers are to be categorized based on risk			
2.4	Reference and Identification in the "Work to Occupations at risk- including class			
2.5	HBA risks included in Risk Assessment or HBA Risk Assessment conducted?			
2.6	PPE Requirements have been identified and are selected as per the standards. Inclusion of additional requirements in the FA Kits			
2.7	HBA Specific emergency contact details available			
3	Plan Content			
3.1	Identification and communication of government HBA level.			
3.2	Appointment of manager responsible for HBA plan implementation (Reg 16.5)			
3.3	Restriction of gathers (number of persons) and number of persons at work (workforce number) defined as per the level.			
3.4	Screening process is defined			
3.5	Registers of daily contact are available (Employee register)			
3.6	Register of daily screening questionnaire			
3.7	PPE Register (Daily issuing of PPE)			

Contractor:
Site:
Inspected By:
Date:

Item	Checklist item	Adequately Defined & Prepared		Comment
		Yes	No	
3.8	Process for an identified worker suspected of infection			
3.9	Access control defined and monitoring method			
3.10	Social distancing defined (1.5m to 2m rule)?			
3.11	Gatherings of no more than 10 people defined?			
3.12	Employee monitoring is defined in particular to self, active and self-active monitoring.			
3.13	Decontamination procedure defined for common areas			
3.14	Selection of chemicals for decontamination			
3.15	Procedure for possible infection.			
3.16	Procedure for reintroduction of isolated or quarantined person into the work place.			
3.17	Investigation into the work place under HBA Reg and Section 24.			
3.18	Management and sterilization of tools and equipment			
3.19	Common property (shared items such as cell phones, pens etc) are restricted.			
3.20	Waste Management defined including the establishment of Bio contractor			
4	Training			
4.1	Reporting structure defined for HBA			
4.2	HBA isolation period defined			
4.3	Plan communicated to the employees			
4.4	Register signed			

Contractor:
 Site:
 Inspected By:
 Date:



HBA Prevention & Control Management Plan Approval				
Site Name:				
Contractor:				
Contractors CHSO Name:				
Contractors CHSO Contact Details:				
HBA PCM Plan Inspection Number:				
HBA PCM Plan Approved?	Yes	No	Comments:	
	✓	X		
Inspected/ Audited By:	N.W Atkinson (CHSM/330/2017)			
Sign:			Date:	
Reviewed by:	R.W Atkinson (CHSA/027/2015)			
Sign:			Date:	

Health & Safety Compliance Audit Corrective Action Record

Date:		CWP Number:	
Site/Project Name:		Contract Number:	
Audit Date:		Audit Number:	

Item Number:	Deviation Identified	Corrective Action Taken	Responsible Person:	Due Date:	Actual Close Out Date	Responsible Person Sign:

ACTION PLAN PREPARED BY CHSM/CHSO CR8(5):		ACTION PLAN APPROVED BY Construction Manager CR8(1):	
DATE:		DATE:	
SIGN:		SIGN:	

Contractor:
 Site:
 CHSO:
 Date: DD/MM/20YY

Site Close Out Documents Required:

Scan in all required documents and provide a copy on memory stick to the Pr.CHS Agent and Client.

		Yes	No	Comments
Documentation Required:				
1.	Clients Baseline Risk Assessment.	✓	X	
2.	Clients Site Specific Health and Safety Specification as signed by all parties.			
3.	Principal Contractor Health and Safety File Approval.			
4.	Section 37 Mandatory Agreements and CR5(1)(k) as signed by the Client and Principal Contractor.			
5.	5.1 Principal Contractor Occupational Health & Safety Plan fully signed.			
	5.2 Client Approval of Principal Contractor Occupational Health & Safety Plan.			
6.	6.1 Principal Contractor Site Specific Fall Protection Plan fully signed.			
	6.2 Client Approval of Principal Contractor Site Specific Fall Protection Plan.			
7.	Principal Contractors Environmental/ Waste / Traffic Management Plans fully signed.			
8.	Principal Contractors Company Policies e.g. H&S Policy, Smoking Policy, Alcohol Abuse Policy, Covid/HBA Policy, Disciplinary Policy, etc as signed by duly authorised person.			
9.	Principal Contractors Organograms			
10.	Principal Contractors Induction Material and Register as signed by all employees on the contract.			
11.	Principal Contractors Legal Appointments:			
11.1	Legal Appointment Register			
11.2	CEO/16(1) Resolution of Responsibility Letter: 1.			
11.3	Section 16(2): 1.			
11.4	CR8.1 Construction Manager: 1. 2.			
11.5	CR8.2 Assistant Construction Manager: 1.			
11.6	CR8(7) Construction Supervisor: 1.			
11.7	CR8(8) Assistant Construction Supervisor: 1.			
11.8	CR8(5) Construction Health and Safety Officer: 1.			
11.9	GSR 3(4)&(5) First Aid Officer: 1.			
11.10	CR9(1) Risk Assessor: 1.			

Contractor:
 Site:
 CHSO:
 Date: DD/MM/20YY

11.11	GAR 9(2) Incident Investigator: 1.			
11.12	CR10(1)(a) Fall Protection Plan Developer: 1.			
11.13	GSR5 Confined Space Assessor: 1.			
11.14	EMR10 Portable Electric Tool Inspector: 1.			
11.15	CR23(1)(k) Mobile Plant Inspector: 1.			
11.16	CR29/ERW9 Evacuation Officer: 1.			
11.17	CR28(a) Housekeeping Stacking & Storing Supervisor: 1.			
11.18	GSR13(a) Ladder Inspector:			
11.19	Hand Tool Inspector: 1.			
11.20	PPE Inspector:			
11.21	CR29(h) Fire Equipment Inspector:			
11.22	Sect19&20 Health & Safety Committee Chairman			
11.23	Health & Safety Committee Member			
11.24	Sect17 Health & Safety Representative: 1.			
11.25	CR24(c) Temporary Electrical Installation Inspector			
11.26	Covid-19 Compliance officer: 1.			
11.27	Designated Person Hazardous chemical substance: 1.			
11.28	Environmental Officer: 1.			
12.	Notification of Construction Work			
13.	Letter of Good Standing			
14.	Incident Reports			
15.	Health and Safety Agents Audits and Inspection Reports.			
16.	Principal Contractors Corrective Action Reports for each of the Health and Safety Agents Audits Reports.			
17.	Technical and Safety Method Statements.			
18.	Risk Assessments.			
19.	Safe Work Procedures.			
20.	PPE issue register.			
21.	Medical Certificate of Fitness: Annexure 3 (Pre, Annual and Exit). NB: Medical records are to be kept according to the OH&S Act as amended.			

Contractor:
 Site:
 CHSO:
 Date: DD/MM/20YY

22.	Training Records for any training done during the project.			
23.	External Survey Reports done during the project e.g. Noise / Asbestos / HBA / HCS / Lighting, etc			
24.	Sub-Contractor Documents: Full Files for all Sub-Contractors including the Close Out Report as conducted by the Principal Contractor. NB: Ensure that each Sub-Contractor has its own separate folder and use the list below for sub-folder headings.			
24.1	List of Sub-Contractors.			
24.2	List of all employees employed on a permanent or contractual basis over the duration of the contract. Including the Induction Register and Annexure 3 for each person.			
24.3	Sub-Contractors Approval Letters (approval of H&S File) and Approval of other critical documents not covered by PC activity (where required) such as Fall Protection Plan, Confined Space Entry Plan, etc			
24.4	Sub-Contractors: Section 37 Mandatory Agreements and CR7(1)(c)(v) Appointment letter as signed by both parties.			
24.5	Sub-Contractors Letters of Good Standing(s)			
24.6	Sub-Contractors Legal Appointments including CV's & Certificates of competency.			
24.7	SHE Plans			
24.8	SHE Policy			
24.9	Method Statements			
24.10	Risk Assessments			
24.11	Safe Work Procedures.			
		Yes	No	Comments
Visual Site Inspection:				
Site Inspection Date:				
1.	Housekeeping Done?	✓	X	
2.	Lay Down Areas Cleared?			
3.	Hording/ Site Fencing Removed?			
4.	Storage Containers/ Storage Buildings / Offices Removed from site?			
5.	Surfaces Reinstated (where required)?			
6.	Welfare Facilities Cleaned (i.e. Existing facilities that were used during construction have been cleaned and are ready to be handed back to client).			
7.	Welfare Facilities Removed (i.e. Portable Toilets Removed, Shower facilities removed, resting and eating areas removed, etc). (For projects where facilities had to be erected).			
8.	All Barricading Removed from site?			

Contractor:
 Site:
 CHSO:
 Date: DD/MM/20YY



9.	All stockpiles of materials removed from site?			
10.	All tools and equipment removed from site?			
11.	No Hazards exist on site?			

Visual Inspection Comments:

-
-
-

Site Photos (Insert Photographs as proof of site condition upon demobilisation):

Site Name:	
Contractor:	
Construction Manager CR8(1):	
CR8(1) Contact Details:	
CHSO CR8(5):	

Contractor:
Site:
CHSO:
Date: DD/MM/20YY



CHSO Contact Details:			
Pr.CHS Agent:			
Sign:		Date:	