" The City of Heritage "

ULUNDI LOCAL MUNICIPALITY

QUOTATION NO.: 21/2023/2024/RFQ/02

QUOTATION DESCRIPTION

CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE

CIDB CLASSIFICATION: 6CE/6GB OR HIGHER

SUBMISSION OF QUOTATION DOCUMENT DEADLINE

Date: Wednesday, 4 June 2025
Time: 12h00
Venue: Ulundi Municipality, SCMU, Corner of Princess Magogo and King Zwelithini Street, Ulundi, 3838

Name of bidder	
Contact person	
Tel/ Cell Number	
Email Address	
Physical Address	
CRS Number	
CSD Number	**MAAA**
Quotation Amount (VAT incl.)	**R**
Quotation Amount in words	

EXPANDED PUBLIC WORKS PROGRAMME
Creating opportunities towards human fullfilment

*Sealed bid document must be deposited in the Tender Box provided at the Ulundi Municipality SCMU, Corner of Princess Magogo and King Zwelithini Street, Ulundi by no later than **12h00** on the **4th of June 2025**. Please be advised that the bid number and closing date should be written at the back of the envelope.*

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CHECK-LIST FOR TENDER SUBMISSION

PLEASE ENSURE THAT THE FOLLOWING FORMS HAVE BEEN DULY COMPLETED AND SIGNED AND THAT ALL DOCUMENTS AS REQUESTED, ARE ATTACHED TO THE BID DOCUMENT:

Page No.	Description	Yes	No	Remarks
6	MBD 1: Invitation to Bid			
8	Certificate of Authority for Signatory			
11	Compulsory Enterprise Questionnaire			
12	Declaration of Interest – MBD 4			
17	Preference Points Claim Form in terms of the Preferential Procurement Regulations 2022 – MBD 6.1			
20	Declaration of Bidders' Past Supply Chain Management Practices – MBD 8			
22	Certificate of Independent Bid Determination – MBD 9			
36	Bill of Quantities			
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	Company Registration Documents, e.g. CIPRO			

THE TENDER

PART T1: BIDDING PROCEDURES

" The City of Heritage "

ULUNDI MUNICIPALITY

ULUNDI LOCAL MUNICIPALITY

T1.1 - BID NOTICE AND INVITATION AWARD

Bids are hereby invited from suitable service providers of the following Ulundi Municipality projects:

Quotation No.	Quotation Description	Point System	Closing Date	Time	Technical enquiries	Contact number
21/2023/2024/RFQ/02	Construction Of Ulundi Sports Complex In Ward 12: Phase 1B Indoor Sports Centre	80/20	04/06/2025	12h00	Miss P.T. Nxumalo	035 874 5100

Only service providers appointed in the established Panel of contractors for Civil Engineering related work for 36 months (Bid 21-2023/2024) will be considered.

Bid documents may be obtained at the Ulundi Municipality SCMU office, Corner of Princess Magogo and King Zwelithini Street, Ulundi. Bid documents must be submitted in a sealed envelope clearly marked with the bid number, closing date and, dropped off in the tender box at SCMU, Ulundi Municipality, Corner of Princess Magogo and King Zwelithini Street, Ulundi, 3838 by no later *12H00* of the above stated closing dates. The bid box is generally open from 07h30 to 16h30 Monday to Thursday and 07h30 to 15h15 Friday. All quotes must be submitted on the official forms – (Not to be retyped). This bid is subject to the general conditions of contract (GCC) and any other special conditions of contract.

NOTE:

1. Written quotations must be submitted based on the bill of quantities.
2. Written quotation documents including the bill of quantities may only be completed in **black ink.**
3. All prices must be quoted in South African Rand and the **pricing strategy is re-measurable.**
4. Quotations shall remain valid for **ninety 90 days** after the closure date.
5. No contract shall be concluded with any bidder whose tax matters are not in order.
6. ***Please note that no quotations received after the closing time will be considered.***
7. Quotations will be evaluated on **Price and Specific Goals** in line with PPPFA and SCM policy of the municipality.
8. The Municipality reserves a right to apply objective evaluation criteria. Should the recommended bidder pose any of the above-mentioned risks after assessment.

This proposal will be evaluated using 80/20 Preferential Procurement Point system where 80 points are for price, and 20 points are for Specific goals in terms of SCM Regulation 2022.

Specific goals for the tender and points claimed as indicated per table below.

SPECIFIC GOAL ALLOCATED TERMS OF THIS TENDER	NUMBER OF POINTS ALLOCATED
Black ownership with at least 51%	5
Black ownership with disabilities as defined by Empowerment Equity Act of 1998. (Attach certificate)	3
Black women ownership with at least 30% ownership	2
Black youth ownership by at least 30%	3
Black Military veteran ownership	2
Suppliers situated in the Local Municipality of the project/event.	3
Small, Medium & Micro Enterprise, makes a profit of less than R10 million a year.	2
TOTAL	20

Late tenders will not be accepted, and the Ulundi Municipality reserves the right not to make an award. Failure to comply with the above conditions will invalidate your offer.

Pre-qualification conditions for a quotation (PPPFA) Act 2000: Exempted Micro Enterprise (EME) or Qualifying Small Enterprise (QSE) which is at least 51% owned by black people who are women and 51% owned by black people living in rural or underdeveloped areas or townships.

Kindly note that the successful bidder will be subjected to a screening process prior to the bid being awarded, should it be discovered that a successful bidder provided misleading information he/she will be disqualified with immediate effect.

SCM related enquires: NS Luzipho (035 874 5100)

Mr. S.M. KHOMO

MUNICIPAL MANAGER

MBD1

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (*ULUNDI LOCAL MUNICIPALITY/ MUNICIPAL ENTITY*)					
QUOTATION NUMBER:	21/2023/2024/RFQ/02	CLOSING DATE:	06 JUNE 2025	CLOSING TIME:	12H00
DESCRIPTION	CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE				
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*

BA 131 PRINCESS MAGOGO AND KING ZWELITHINI STREET
ULUNDI
3838

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:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		☐ 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 SPECIFIC GOALS]					
SCHEDULE 1: ARE YOU THE ACCREDITED REPRESENTATIVE **IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?**	☐Yes ☐No [IF YES ENCLOSE PROOF]		**SCHEDULE 2:** ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES /WORKS OFFERED?**		☐Yes ☐No [IF YES, ANSWER PART B:3]
SCHEDULE 3: SIGNATURE OF BIDDER	……		**SCHEDULE 4: DATE**		
SCHEDULE 5: CAPACITY UNDER WHICH THIS BID IS SIGNED					

BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT	SCM	CONTACT PERSON	PT NXUMALO
CONTACT PERSON	N.S. LUZIPHO	TELEPHONE NUMBER	035 874 5100
TELEPHONE NUMBER	035 874 5100	FACSIMILE NUMBER	035 874 5174
FACSIMILE NUMBER	035 874 5174	E-MAIL ADDRESS	tnxumalo@ulundi.gov.za
E-MAIL ADDRESS	nluzipho@ulundi.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, 2022, 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: ……...

PART 2: RETURNABLE DOCUMENTS

CERTIFICATE OF AUTHORITY FOR SIGNATORY

The Tenderer must indicate the enterprise status by ticking the appropriate box hereunder.

(I) SOLE PROPRIETOR	(II) CLOSE CORPORATION	(III) PARTNERSHIP	(IV) COMPANY	(V) JOINT VENTURE / CONSORTIUM	
				Incorporated	
				Unincorporated	

Note:
The following document must be attached to this form according to the status of the enterprise, in the form of a resolution authorising the signatory to sign all documents and any contract resulting therefrom on behalf of the enterprise, and **such resolution shall include a specimen signature of the signatory.**

Cooperative:	'Resolution of the Members'
Close Corporation:	'Resolution of the Members'
Company:	'Resolution of the Board' signed by the chairperson
Joint Venture / Consortium:	'Resolution/agreement passed/reached' signed by the authorised representatives of the enterprises

MEMBERS RESOLUTION

QUOTATION NO. 21/2023/2024/RFQ/02: CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE

Close Corporation / Company / Partnership / Trust /Sole proprietor or sole trader Name: _____Registration

Number:_____RESOLUTION OF THE

DIRECTORS OF THE COMPANY etc RESOLVED that _____, in his/her capacity as

_____, is authorised to make applications on behalf of the Close Corporation / Company / Partnership / Trust /Sole proprietor or sole trader for: any documentation relating to the business (which is not necessarily a change of ownership). The nominated person will also have access to webpage for the business.

Signature(s) for Close Corporation / Company / Partnership / Trust/ Sole proprietor or sole trader.
(sole member still must sign this resolution)

Signature of members:

	Name	Signature	Date
1.	_____	_____	_____.
2.	_____	_____	_____.
3.	_____	_____	_____.
4.	_____	_____	_____.
5.	_____	_____	_____.
6.	_____	_____	_____.

Specimen signature of the signatory:_____

CERTIFICATE FOR JOINT VENTURE

QUOTATION NO. 21/2023/2024/RFQ/02: CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorize Mr/Ms, …….. authorized signatory of the company,……..…….....acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Bid No…… and any contract resulting from it on our behalf.

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

Signature of Signatory: .....

As Witnesses:

1..... Name in Block Letters.....

2..... Name in Block Letters.....

Date: .....

NAME OF FIRM	ADDRESS	THORISING SIGNATURE, NAME AND CAPACITY
Lead partner		

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

COMPULSORY ENTERPRISE QUESTIONNAIRE

The following particulars must be furnished. In the case of a joint venture, separate enterprise questionnaires in respect of each partner must be completed and submitted.

Section 1: Name of Enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB:

Section 4: CSD:

Section 5: Particulars of sole proprietors and partners in partnerships

Name	Identity Number	Personal Income Tax Number

**** Complete only if sole proprietor or partnership and attach separate page if more than 3 partners***

Section 6: Particulars of companies and close corporations

Company registration number:

Close corporation number:

Tax reference number:

The undersigned, who warrants that he/she is duly authorized to do so on behalf of the enterprise:

(i) Authorizes the employer to verify the tenderers tax clearance status from the South African Revenue Services that it is in order;

(ii) Confirms that neither the name of the enterprise nor the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;

(iii) Confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise control over the enterprise appears, has within the last five years been convicted of fraud or corruption;

(iv) Confirms that I/we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and

(v) Confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed : **Date :**

Name : **Position :**

Enterprise Name:

MBD 4

DECLARATION OF INTEREST

1.	No bid will be accepted from persons in the service of the state*.	
2.	Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in the 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 / her representative: …….. Identity number: ……	
3.2		
3.3	Position occupied in the Company (director, trustee, shareholder²): …….. Company Registration Number: ……	
3.4		
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 (where applicable) 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 the following particulars: Name of person / director / trustee / shareholder member: …….. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……	
3.9	Have you been in the service of the state for the past twelve months?	**YES / NO**

3.9.1	If so, furnish particulars. …….. ……..	
3.10 3.10.1	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? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …….. Any other particulars: ……. ……..	**YES / NO**
3.11 3.11.1	Are you aware of any relationship (family, friend, other) between the bidder and any person in the service of the state who may be involved with the evaluation and or adjudication of this bid? If yes, furnish the following particulars: Name of person: ……. Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. ……....	**YES / NO**
3.12	Are any of the company's directors, managers, principal shareholders, or stakeholders in the service of the state?	**YES / NO**
3.12.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: …… Name of state institution at which you or the person connected to the bidder is employed: ……..	

	Position occupied in the state institution: …… Any other particulars: ……. ……..……..	
3.13 3.13.1	Is any spouse, child or parent of the company's directors, trustees, managers, principal shareholders, or stakeholders in the service of the state? If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: …… Name of state institution at which you or the person connected to the bidder is employed: …….. Position occupied in the state institution: …… Any other particulars: ……. ……..……..	**YES / NO**
3.14 3.14.1	Do you or any of the directors, trustees, managers, principal shareholders, or stakeholders of this company have any interest in any other related companies or business whether they are bidding for this contract? If yes, furnish particulars: …….. ……..	**YES / NO**

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

THE FOLLOWING INFORMATION IS COMPULSORY TO COMPLETE:

Full Name	Identity Number	State Employee Number (where applicable)

5.	**The contract will be automatically cancelled if there is a conflict of interest which is not disclosed by the bidder.**

…….. ……..
Signature Date

…… …….
Capacity Name of Bidder

[1]MSCM Regulations: "in the service of the state" means to be -
(a) a member of –
(i) any municipal council.
(ii) any provincial legislature; or
(iii) the National Assembly or the National Council of Provinces.
(b) a member of the board of directors of any municipal entity.
(c) an official or 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 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 exercise control over the company.

MBD 6.1

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

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

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

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1. GENERAL CONDITIONS

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

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

1.2 **To be completed by the municipality**

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

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

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

(a) Price; and

(b) Specific Goals.

1.4 **To be completed by the municipal:**

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for functionality and specific goals	**100**

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

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

2. DEFINITIONS

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

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

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

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

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1. THE 80/20 PREFERENCE POINT SYSTEMS

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

80/20

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

Where

Ps	=	Points scored for price of tender under consideration
Pt	=	Price of tender under consideration
Pmin	=	Price of lowest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

(b) any other invitation for tender, that either the 80/20 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system, then the municipality must indicate the points allocated for specific goals for both the 80/20 preference point system.

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

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

The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Black ownership with at least 51%	5	
Black ownership with disabilities as defined by Empowerment Equity Act of 1998. (Attach certificate)	3	
Black women ownership with at least 30% ownership	2	
Black youth ownership by at least 30%	3	
Black Military veteran ownership	2	
Suppliers situated in the Local Municipality of the project/event.	3	
Small, Medium & Micro Enterprise, makes a profit of less than R10 million a year.	2	
TOTAL	**20**	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm…….

4.4. Company registration number: ……...

4.5. TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

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

i) The information furnished is true and correct;

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

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

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

(a) disqualify the person from the tendering process;

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

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

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

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

.....

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: .....

DATE: .....

ADDRESS: .....

.....

.....

.....

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

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

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

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

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as a company or person prohibited from doing business with the public sector? **(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the *audi alteram partem* rule was applied).**	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)? **(To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).**	Yes ☐	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:		
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:		

*Indicate YES or NO

CERTIFICATION

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

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

……...	……..
Signature	Date
…….	……..
Position	Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

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

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

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:

   Has been requested to submit a bid in response to this bid invitation;

   (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
   (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
   (a) Prices;
   (b) geographical area where product or service will be rendered (market allocation)
   (c) methods, factors or formulas used to calculate prices;
   (d) the intention or decision to submit or not to submit, a bid;
   (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
   (f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

[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 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**

THE CONTRACT

C1. AGREEMENTS AND CONTRACT DATA

C1.1 Form of Offer and Acceptance

Offer

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

CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE

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

By the representative of the tenderer, deemed to be duly authorized, 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 PRICE INCLUSIVE OF 15% VALUE ADDED TAX IS:

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

R . . . . . (in figures)

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

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

Name . . . . . .

Capacity . . . . . .

for the tenderer
(Name and address of organization) . . . . . .
. . . . . .
. . . . . .

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

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1: Agreements and contract data, (which includes this agreement)
Part C2: Pricing data
Part C3: Scope of work.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as 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.

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. Failure to fulfill any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor**)** within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

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

Name . . . . . .

Capacity . . . . . .

for the Employer Ulundi Local Municipality
BA 131 Corner of Princess Magogo and King Zwelithini Street
Ulundi
3838

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

. . . . . .

Schedule of Deviations

1 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

2 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

3 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

4 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

5 Subject . . . . . .

Details . . . . . .

. . . . . .

. . . . . .

. . . . . .

By the duly authorized representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

C.1.2 Contract Data

Part 1: Contract Data Provided by the Employer

GENERAL CONDITIONS OF CONTRACT

The following standardised General Conditions of Contract:

General Conditions of Contract for Construction Works (Third Edition, 2015)
Prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and from the General Conditions of Contract for this contract. Copies of these Conditions of Contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, email: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Engineer.
The General Conditions of Contract 2015 makes references to the Contract Data for specific data, which, together with these conditions, collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Specific Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the General Conditions of Contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given is cross-referenced to the Clause in the General Conditions of Contract to which it mainly applies.

CONTRACT SPECIFIC DATA

The following Contract specific data are applicable to this Contract:
Clause 1.1.1.13: Defects Liability Period

The defects liability period is a period of 365 days, measured from the date of the Certificate of Completion.

Clause 1.1.1.15: Employer

The **Employer** is **ULUNDI MUNICIPALITY**, represented by **Miss P.T. Nxumalo** and/or such person or persons duly authorised thereto by the Employer in writing, and the legal successors in title of this person and is referred to in this Contract Document as “Employer.

Clause 1.1.1.16: Engineer

The **Engineer**, referred to in the documents, is the Technical Services Department, **Ulundi Municipality** acting through a Director or an official authorised thereto in writing.

The name of the Engineer is: **Miss P.T. Nxumalo** or their successors duly appointed by the Employer.

Clause 1.1.1.26: Pricing Strategy

The Pricing Strategy is Re-measurement.

Clause 1.1.1.28: Scope of Work
Replace with the following:
“Scope of Work” means the document(s) containing the Standard Specifications, the Project Particular Specifications and the Drawings, that specify and describe the Works which are to be provided, and any other requirements and constraint relating to the manner in which the work is to be carried out.

Clause 1.1.1.34: Writing
Add the following Clause after Clause 1.1.1.34

1.1.1.35 "Drawings" means all drawings, calculations and technical information forming part of the Tender Documents (other than information contained in the Specifications) and any modifications thereof or additions thereto from time to time approved in writing by the Engineer or delivered to the Contractor by the Engineer.

Clause 1.2.1.2: Notices

The name of the Employer is : **ULUNDI MUNICIPALITY**

The address of the Employer is : Corner of Princess Magogo and King Zwelithini Street
Ulundi
3838

The name of the Engineer is : **TECHNICAL SERVICES, ULUNDI MUNICIPALITY**

The address of the Engineer is : Corner of Princess Magogo and King Zwelithini Street
Ulundi
3838

Clause 1.3.5: Contractor's Copyright
Add the following to Clause 1.3.5:

No part of any document or drawings issued with this enquiry may be copied, photographed or repeated in any manner or by any process without the written consent of the Engineer. Copyright is reserved on all designs, specifications, patents and patentable designs, systems and processes contained in the documents and drawings.

The person, firm, or body to whom these documents are issued or made available shall be held jointly and severally responsible in their personal and corporate capacities for any contravention of the requirements of Clause 1.3.5. The recipients of these documents shall treat the documents as well as the details contained herein as private and confidential.

Clause 3.2.3: Employer's Approval Required

The Engineer is required to obtain the specific approval of the Employer before executing any of the following functions or duties:

1. The reduction of a penalty for delay in terms of Clause 5.13.2.
2. The issuing of a variation order in terms of Clause 6.3.2.
3. Issuing of instructions to carry out work on a daywork basis in terms of Clause 6.4.1.4.
4. The determination of additional or reduced costs arising from changes in legislation in terms of Clause 6.8.4.
5. The agreeing of the adjustment of the sums for general items in terms of Clause 6.11.
6. The inclusion of credits in the next payment certificate in terms of Clause 10.1.5.2.

Clause 4.3: Legal Provisions
Add the following Clauses after Clause 4.3.2:

4.3.3 The Employer and the Contractor shall enter into an agreement to complete the work required for the construction of the works in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act (No. 85 of 1993) and the Construction Regulations promulgated thereunder, as well as any further requirements stipulated in this contract document.

4.3.4 The Contractor shall provide proof to the Employer, within 14 days of the Commencement Date, that he/she has paid all contributions required in terms of the Compensation for Occupational Injuries and Diseases Act (Act No. 130 of 1993).

Clause 4.4: Subcontracting

4.4.1 Re-word this sub-clause as follows:
The Contractor is mandated to subcontract a minimum of 30% of the work to Emerging Micro-enterprises or small business enterprises that are 51% owned by either black people, black youth, black women, black people with disabilities, black persons living in rural or underdeveloped areas and black military veterans, but it shall not subcontract the whole contract.

Clause 5.3: Commencement of Works

The Contractor shall commence executing the Works within 28 days from the Commencement Date.

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.

Clause 5.4: Access to the Site
Add the following clause after Clause 5.4.3:

5.4.4 The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his/her own cost any additional facilities outside the Site required by him/her for the purposes of the Works.

Clause 5.5.1: Time for Practical Completion

The Works shall be completed within the time frame stipulated or tendered (as applicable) on the Summary of the Bill of Quantities, exclusive of the special non-working days and the year-end break and inclusive of the 28 day period referred to in Clause **5.3** above.

Clause 5.6.1: Programme of Works

The Contractor shall deliver the programme of work within 14 days of the Commencement Date. The programme shall clearly show the order in which the Contractor proposes to carry out the work, including the critical path, the proposed rate of progress and a linked cash flow forecast. The programme shall be updated monthly.

Clause 5.8: Non-Working Times
The special non-working days are the days falling in the year-end break and all gazetted public holidays falling outside the year end break.

Clause 5.9: Instructions
Add the following Clauses after Clause 5.9.7:

5.9.8 Tender Drawings shall be used for tender purposes only and shall not be used for construction.

The Engineer shall have full power and authority to supply to the Contractor from time to time during the progress of the Works copies of such further drawings and such instructions as shall be necessary for the purpose of the proper and adequate execution and maintenance of the Works, which the Contractor shall carry out and be bound by.

Clause 5.12.2.2: Extension of Time Due to Abnormal Rainfall
Regardless of the cause of any delay an extension of time will only be considered if it can be shown that the activity delayed is on the critical path indicated on the Programme of Works (Clause 5.6.1).

No extension of time will be granted in respect of any delays attributed to normal climatic conditions. Normal Climatic Conditions shall be deemed to include normal rainfall and associated wet conditions and materials, strong winds and extremes of temperature. However, in the event that delays to critical activities exceed the number of working days listed below for each month, then abnormal climatic conditions shall be deemed to exist, and an extension of time shall be granted in accordance with the provisions of that Clause.

The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts work on the critical path.

January	4 days	May	1 days	September	2 days
February	4 days	June	Nil days	October	3 days
March	4 days	July	Nil days	November	4 days
April	2 days	August	Nil days	December	3 days

Claims for delays for abnormal climatic conditions shall be accompanied by substantiating facts and evidence, which shall be submitted timeously as each day or half-day delay is experienced. Should an extension of time be granted by the Engineer such extension of time will be added to the Time for Completion or set against any over-provision that may have occurred in the abovementioned schedule.

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

Clause 5.12.3: Adjustment to General Items
Add the following to Clause 5.12.3

The cost of time related general items will be calculated on the basis of the number of days in Clause **5.5.1**.
Clause 5.13.1: Penalty for Delay

The penalty for failing to complete the Works on time is R 1 500.00 per calendar day.

Clause 6.2: Security

The Deed of Guarantee is to be delivered to the Employer within 14 days of the Commencement Date. The Performance Guarantee shall be worded as set out in the document included in C1.5. The security to be provided by the contractor shall be a Performance guarantee of 10% of the contract sum plus retention of 10% of the value of the works.

Clause 6.5.1.2.3 Basis of Payment of dayworks
The percentage allowance to cover overhead charges for dayworks which has not been included in the Daywork Schedule, are as follows:

50% on the cost of labour (6.5.1.2.1, and
15% on the cost of materials (6.5.1.2.2)

No allowance will be made for work done, or for materials and equipment for which daywork rates have been quoted at tender stage.

Clause 6.8.2: Contract Price Adjustment

The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:

The value of the Contract Price Adjustment Factor shall be calculated to 4 decimal places.

The value of "x" is 0.10.

The values of the coefficients are:
a = 0.20
b = 0.20
c = 0.50
d = 0.10

The Site or largest part thereof shall be deemed to be located in the national province of KwaZulu-Natal.
The applicable industry for the Producer Price Index for materials is Building and Construction Civil Engineering.
The area for the Producer Price Index for fuel is Coast.
The base month is “one month prior to the closing of the Tender”.
The indices shall be obtained from Stats SA as given in the following publications or any successive publication:

Index	Publication	Table
Labour (L)	P0141	14
Plant (P)	P0151	4
Materials (M)	P0151	3
Fuel (F)	P0151	4

Clause 6.8.3: Variation in Cost of Special Materials

Price adjustments for variations in the costs of special materials are not allowed.

ADDITIONAL CONDITIONS OF CONTRACT
The additional Conditions of Contract are:
Clause 11: Contractor to Provide Everything Necessary
The Contractor is to provide all labour, material, workmanship, machinery and everything which is or may be necessary in and for the execution and entire completion of the Contract in accordance with the Conditions of Contract, Drawings and Scope of Work.

Clause 12: Details to be Confidential
The Contractor shall treat the details of the Works comprised in this Contract as private and confidential (save in so far as may be necessary for the purposes hereof) and shall not publish or disclose the same or any particulars thereof in any trade or technical paper elsewhere without prior written consent of the Engineer.

Part 2: Data Provided by the Contractor

Clause 1.2.1: Delivery of Notices

The name of the Contractor is .....

The address of the Contractor is .....

Physical Address	Postal Address
.....	.....
.....	.....
.....	.....
.....	.....
Telephone:	Fax: .....
Email:	

C.1.3. OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

AGREEMENT MADE AND ENTERED INTO BETWEEN ULUNDI MUNICIPALITY (HERE IN AFTER CALLED THE "EMPLOYER") AND

.....
(Contractor/Mandatory/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, ACT No. 85 OF 1993 AS AMENDED.

I, ...

representing

..... , as an employer in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.
I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID ACT Registration Number: .....

OR Compensation Insurer: ..... Policy No.:.....

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an Occupational Health and Safety Agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the appended Occupational Health and Safety Conditions and undertake to comply therewith at all times.
I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan.

EMPLOYER

Signed at ..... … on the ..... day of ..... 20 .....

Signature: …….. **Date: ……**

Name: …….....

Capacity: ……

CONTRACTOR

Signed at ……. on the ..... day of ..... 20 .....

Signature: …….. **Date: ……**

Name: …….

Capacity: ……

C2. PRICING DATA

(Refer to the Attached Bill of Quantities)

C2.1. Pricing Instructions

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

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

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

3. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.
4. The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the items. Such prices and rates shall cover all costs and expenses that may be required in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices shall be used as a basis for assessment of payment for additional work that may have to be carried out.
5. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to **www.sabs.co.za** or **www.iso.org** for information on standards).
6. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered for such items.
7. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
8. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Bills of Quantities.
9. Reasonable compensation will be received where no pay item appears in respect of work required in the Bills of Quantities in terms of the Contract and which is not covered in any other pay item.
10. The short descriptions of the items of payment given in the Bill of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
11. Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the SANS 1200 Standardised Specifications.

C2.2. Bill of Quantities

DECLARATION

(In respect of completeness of Tender)

Ulundi Municipality
BA 131 Corner of Princess Magogo Street and King Zwelithini
Ulundi
3838

I/we, the undersigned, do hereby declare that these are the properly priced Bill of Quantities forming part of this contract document in consecutive order upon which tender for:

QUOTATION NO.: 21/2023/2024/RFQ/02
CONSTRUCTION OF ULUNDI SPORTS COMPLEX IN WARD 12: PHASE 1B INDOOR SPORTS CENTRE

SIGNED BY/ON BEHALF OF TENDERER

TENDERER

Signature: …….. Date: ……..…...

Name: ……..

Capacity: ……

Name of Tenderer: ……

C3: SCOPE OF WORK

C3.1 Description of Works

C3.2 Specifications

C3.2.1 Standard Specifications

C3.2.2 Project Specification

C3.2.2.1 Technical Specification for Structural works

C3.3 List of Drawings

C3.4 Particular Specifications

C3.4.1 HIV/AIDS Requirements

C3.4.2 Occupational Health and Safety

C3.4.3 Environmental Management Requirements

C3.2.2 PROJECT SPECIFICATIONS

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

PS 1 GENERAL DESCRIPTION
PS 2 DETAILS OF CONTRACT
PS 3 DESCRIPTION OF SITE AND ACCESS
PS 4 CONSTRUCTION PROGRAMME
PS 5 SITE FACILITIES AVAILABLE AND REQUIRED
PS 6 SITE FACILITIES REQUIRED FOR THE ENGINEER
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PS 25 ENVIRONMENTAL AND SAFETY

C.3.2.2PROJECT SPECIFICATIONS:
Status
The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

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

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

A: GENERAL

PS 1 GENERAL DESCRIPTION

This contract entails the Construction of Ulundi Sports Complex in Ward 12: Phase 1B Indoor Sports Centre

In brief the Works included in this Contract are as follows:

- Construction of the superstructure brickwork
- Installation of Roof Covering Canopy
- Waterproofing
- Metalworks
- Plastering

PS 2 DETAILS OF CONTRACT

THE CONTRACT INCLUDES THE FOLLOWING WORKS:

The contractor shall co-ordinate the cutting into and connecting of services to existing services with the Local Authority and obtains their prior approval for any work to be done in this regard.

The proposed works entail the following:

Building Structural - Indoor Sports Centre (72.0m x 45.0m)
Ground Floor Brickwork:

- Combination Courts For: (Volleyball, Netball, Basketball, Table Tennis)
- Boxing Ring (movable)
- Gymnasium
- Female and Male Changerooms facilities
- Public Male and Female Ablutions
- Offices
- Dining Area
- Kitchen
- Storerooms
- Meeting Room Equipment Store
- Cleaning Storage
- It can accommodate 2500 Seating Capacity

Mezzanine Floor Brickwork

- Offices
- Dining Area
- Spectator Seating
- Public Male and Female Ablutions
- Vip Male and Female
- Control Room
- Building Finishes
- Electrical first fix Installations
- Mechanical first fix Installations

Installation of Roof Covering Canopy
Waterproofing
Metalworks
Plastering

The contractor is to co-ordinate all his operations and activities with the Employer and other contractors who might be working on the site, shall make timeous arrangements with the employer and the other contractors to supply and position materials and items to be built in or permanently covered up and shall afford the Employer and other contractors full access to the site and their work in progress at all reasonable times to enable them to complete their work before the completion date of this contract.

The contractor shall take due care not to damage any of the work done by the Employer or other contractors and any such damage shall be repaired at his cost.

The contractor shall co-ordinate the cutting into and connecting of services to existing services with the Local Authority and obtain their prior approval for any work to be done in this regard.

PS 3 DESCRIPTION OF SITE AND ACCESS

PS3.1 LOCALITY

The site is located in Ward 12 within Ulundi Municipality.

Figure P.S.3.1 below shows the location of the proposed site in relation to the access roads.
FIGURE PS3.1 – LOCALITY PLAN OF ULUNDI

PS4 CONSTRUCTION PROGRAMME

If the programme submitted by the Contractor in terms of Clause 5.6 of the General Conditions of Contract, has to be revised because the Contractor is falling behind in his programme, he shall submit a revised programme of how he intends to regain lost time to ensure completion of the Works within the period defined in Clause 5.7 of the General Conditions of Contract or within a granted extension of time and also to ensure that other contractors have access to the site to start their work on the dates as shown in the original programme. Proposals to increase the tempo of work must incorporate positive steps to increase production either by more labour and plant on the Site, or by using the available labour and plant in a more efficient manner.

Instructions by the Engineer to expedite progress shall not be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is to be compensated for such works. Failure on the part of the Contractor to submit or to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as set out in Clause 55 of the General Conditions of Contract as amended.
The approval by the Engineer of a programme shall have no contractual significance other than that the Engineer will be satisfied if the work is carried out according to the programme. The said approval shall not limit the right of the Engineer to instruct the Contractor to vary the programme if necessary. The Contractor is also referred to Clause PS 7.1 and PS 7.9 when preparing this programme.

PS 5 SITE FACILITIES AVAILABLE AND REQUIRED

PS 5.1 WATER, ELECTRICITY AND SEWERAGE

(a) Water supply

The contractor shall make his/her own arrangements with ZULULAND DISTRICT MUNICIPALITY for

a metered water supply point for construction purposes and shall be liable for all payments required in this regard.
The contractor is however responsible for any temporary connections he may require. On completion of the contract the contractor shall remove all temporary plumbing, if any, and make good in accordance with acceptable trade practices.

(b) Electrical power supply
The contractor shall be responsible under the Contract for the supply and distribution at his cost of all electricity that he may require for the purpose of constructions. Accordingly, the Contractor shall pay all connection charges, and at his cost provide all connections, transformers, consumption meters, cables, distribution boards and other items that are associated with the supply of electricity for the construction of the Works. The distribution of electricity shall be in accordance with the applicable by-laws and regulations of the supply authority.
The contractor shall allow for the provision at all times of alternative sources of energy against the possibility of a breakdown in this supply.
On completion of the contract, the contractor shall remove all temporary electrical reticulation and make good in accordance with acceptable trade practices.
(c) Sewerage connection
The contractor shall construct suitable sanitary facilities for his personnel and for the Engineer. All facilities provided shall conform to the requirements of ZULULAND DISTRICT MUNICIPALITY. The contractor shall maintain all these facilities, throughout the contract in clean and sanitary conditions. One toilet for the exclusive use of the Engineer's representative shall be provided.

PS 6 SITE FACILITIES REQUIRED FOR THE ENGINEER

PS 6.1 GENERAL
The Contractor shall provide on the Site, for the duration of the project and for the exclusive use of the Engineer and/or his Representative (as applicable), the various facilities described hereunder. All such facilities shall be provided promptly on the commencement of the Contract and failure on the part of the Contractor to provide any facility required in terms of this specification shall constitute grounds for the Engineer to withhold payment of the Contractor's Preliminary and General items until the facility has been provided or restored, as the case may be.

PS 6.2 OFFICE ACOMMODATION
The Contractor shall provide on Site one office for the exclusive use of the Engineer. Such office shall comply with and be furnished in accordance with the requirements of Subclause 3.2 of SANS 1200 AB. The Contractor shall maintain the office in accordance with the requirements of Subclause 5.2 of SANS 1200 AB.
Irrespective of the type of material of which an office is constructed, the Contractor shall ensure that the temperature inside the office is always between 20ºC and 24ºC.
Such office accommodation shall be provided within the Contractor's site establishment facilities.

PS 6.3 CARPORTS

The Contractor shall provide onsite two carports for the exclusive use of the Engineer, in accordance with requirements of Subclause PSAB 3.5 of the Project Specifications.

PS 6.4 SITE MEETING VENUE

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

PS 6.5 CONTRACT NAMEBOARDS
The Contractor shall provide, erect and maintain contract nameboards at such position and location as directed by the Engineer, in accordance with the requirements set out in SANS 1200 AB (as amended) and according to the nameboards drawing contained in the document.

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

PS 6.6 SURVEY EQUIPMENT AND ASSISTANTS

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

(i) 1 upright reading automatic level with tripod
(ii) 1 metric levelling staff with protective cover bag
(iii) 6 ranging rods
(iv) 1x 100 metre Stilton tape measure
(v) 1 x ± 2 kg hammer.

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

(i) 1 tacheometer with tripod
(ii) 1 survey staff for tacheometer
(iii) 1 Distomat, complete with tripod, fully charged battery and all appurtenant accessories.

PS 6.10 ELECTRICITY SUPPLY FOR THE ENGINEER

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

PS 7 FEATURES REQUIRING SPECIAL ATTENTION

PS 7. SITE TO BE KEPT CLEAN
During progress of the work and upon completion thereof, the Site of the Works shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner and shall keep the Site free from debris and obstructions.

All redundant materials, rubbish and waste arising from the work must be removed from the Site within 3 working days as instructed by the Engineer, at the Contractor's cost and the site and buildings left clean and tidy.

PS 7.2 FACILITIES TO OTHER CONTRACTORS

In addition to the requirements of Clause 4.4.5 of the General Conditions of Contract the Contractor must make allowances for other Contractors on the Site. This may involve adapting his programme to accommodate the work of other contractors and ensuring access to their sites along prescribed routes over the Site of this Contract.

PS 7.3 SUBCONTRACTORS

In addition to the requirements of Clause 4.4.5 of the General Conditions of Contract, the Contractor

shall be responsible for work carried out by subcontractors on his behalf. The Engineer will not liaise directly with such subcontractors. Problems related to payments, programming, workmanship, etc, shall be the responsibility of the Contractor and the subcontractor, and the Engineer will not become involved.

PS 7.5 SANS SPECIFICATIONS AND CODES OF PRACTICE

All reference in this document to South African Bureau of Standards specifications and codes of practice, or any other standard specifications or codes of practice, including National Building Regulations, shall be deemed to be references to the latest issues of such specifications and codes.

PS 7.6 MATERIALS
Unless otherwise instructed in writing by the Engineer, all proprietary materials are to be used, mixed, applied, fixed, etc, strictly in accordance with the manufacturer's recommendations.

PS 7.8 TESTING AND QUALITY CONTROL
The Contractor shall engage the services of an approved independent laboratory or other institution as applicable for quality testing, to ensure that his work complies with the Specifications.
No separate payment will be made for such testing, the cost of which will be deemed to be included in the Contractor's rates bid for the items of work that require testing in accordance with the Specifications.
The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced engineers, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

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

The Contractor's attention is drawn to the provisions of the various Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.
On completion and submission of every part of the work to the Engineer for examination, the Contractor shall furnish the Engineer with the results of the relevant tests to indicate compliance with the Specifications.

PS 7.9 WORK OUTSIDE NORMAL WORKING HOURS
No work will be allowed from sunset to sunrise and on Sundays without written approval from the Engineer. The Employer will make no additional payment for any overtime whatsoever. Should the Contractor fall behind programme due to his own default and need to work overtime, the cost thereof will be for the Contractor’s own expense.

PS 7.10 ACCESS TO PROPERTIES
The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work.

PS 7.11 EXISTING RESIDENTIAL AREAS
Access to residential areas and access to individual houses shall be maintained at all times.
PS7.12 EXISTING SERVICES
It is the contractor’s responsibility to check out if any services exist and programme his works accordingly. Services to existing habitable housing units can only be disrupted on prior notification to the affected parties.

The contractor shall be held responsible for any direct or consequential damage of any existing

services. If any such services are known before any works are executed, they should be protected. Protection of services will be paid for as lump sum. The tenderer must therefore satisfy himself on the extent of the services, as no additional payment for protecting the services will be entertained.

PS 8 CERTIFICATES OF PAYMENT

The statement to be submitted by the Contractor in terms of Clause 6.10 of the General Conditions of Contract shall be prepared in accordance with the standard payment certificate prescribed by the Engineer and shall comprise at least two sets of A4-size paper copies.

All costs for the preparation and submission of the statements shall be borne by the Contractor.

PS 9 CONSTRUCTION IN RESTRICTED AREAS

Working space in certain areas may be restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used, and that the rates and prices submitted will be deemed to include full compensation for difficulties encountered while working in restricted areas. No extra payment or any claim for payment due to these difficulties will be considered.

PS 10 DRAWINGS

All information in the possession of the Contractor that is required by the Engineer's representative to complete the as-built drawings must be submitted to the Engineer's representative before a Certificate of Completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless required by the Engineer. The Engineer will provide the dimensions that may have been omitted from the Drawings.

PS 11 LEGISLATION

(a) The Occupational Health and Safety Act

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The Contractor shall in terms of subclause 5(1) of the Act provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

A payment item is included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned Construction Regulations 2003.

PS 12 NON-WORKING DAYS AND HOURS

Whenever any special non-working days stated in Clause 1.6 and Clause 38 of Part 1 of the Contract Data and GCC respectively, fall within the days allowed or stipulated in the Contract, such special non-working days shall also be excluded from the calculation of the number of working days concerned.

The contractor shall not work on any statutory public holidays or on any public holidays declared by the Government to be statutory non-working days, except for work related to fatal and emergency breakdowns.

The Engineer shall be entitled at any time during the Contract, to vary the normal working hours specified in the Bid documents, including increasing or decreasing the total number of hours per day during which the Contractor may execute the Works or specific portions thereof.

If any variation by the Engineer of the normal working hours specified in the Bid Documents should result in an increase or a decrease in the total number of hours per week during which the Contractor is permitted to execute the Works or any particular portions of Works, then the time allowed in the Contract for the completion of the respective part of the Works to which the varied normal working hours apply shall be adjusted proportionately in relation to:

a) the remaining time allowed for completion of the specific part or parts of the Works; and
b) the extent of the variation in the total normal working hours per week.

PS13 EXISTING BUILDINGS AND STRUCTURES

The contractor is to carry out his works with as little inconvenience to the users as far as possible. The contractor shall be responsible for making good, at his own expense and to the satisfaction of the Engineer and the Employer, all damages caused by him to the buildings and other improvements to properties.
Should the contractor consider that damage to buildings and structures, is unavoidable in the execution of any portions of the works, he shall obtain approval of the Engineer before proceeding with the works.

PS14 EXISTING LAND SURVEY PEGS AND BENCHMARKS

The contractor will be held responsible for the maintenance of all cadastral and benchmark pegs on the site that are recorded as existing at the commencement of construction, and for the replacement of any of these pegs that are found to be missing or disturbed upon completion of his construction activities.
A completion certificate will only be issued after the Contractor has corrected all these pegs and has submitted to the Engineer a certificate from a registered Land Surveyor, stating that all evern pegs are in their correct positions.

PS15 EXCAVATIONS

Excavations shall be carried out to the lines shown on the drawing and to such widths as may be necessary for the efficient execution of the work.

The minimum cover requirement for all pipes in traffic areas is 800mm, and in other areas is 600mm. The widths of trenches shall be sufficient to permit convenient access and facilities for pipe handling laying and joining. As is shown on relevant drawings, the main Sewer pipes and the Water mains will be laid different trenches. Payment for trenches will only be based on a width, which is shown on relevant drawings. The total length of open excavation at any one time must not exceed 75m and the contractor will be allowed to work on a maximum of two working fronts.

The contractor shall assume full responsibility for the safety of all excavations and shall at his expense adopt all measures necessary to secure this end, either by timbering, shoring or side sloping of the ground.

PS16 BEDDING

Material excavated from the trenches will generally be used to bed the pipelines and to that end the provision of granular or selected materials will generally not be required except where the in-situ soil materials are unsuitable such as areas with a hard rock and black cotton soil (clayey). In this case bedding materials should be obtained from commercial sources. No payment will be made for the bedding of pipes with materials from pipe trenches and this is deemed to be included in the pipe laying rates or excavate and backfill rates.

PS17 SMALL BORE PIPES

The tendered rates for supply lay and bed pipes of 40mm diameter or smaller are deemed to include for all compression fittings or other types of fittings such as tees, bends, reducers etc. but excluding saddles and valves, unless specified otherwise.

PS18 FLUSHING OF WATER MAINS

On satisfactory completion of hydrostatic checking of all water mains, they shall all be flushed with potable water supplied by the Council. The contractor shall record the quantity of water used, and the duration of flushing. The contractor shall ensure that the water used for flushing is disposed of in an approved manner, without any damage, nuisance, or injury to people or property. The contractor shall allow in his rates for all costs associated with the flushing of the water mains and communication pipes save the cost of the water used.

PS19 CONNECTION TO EXISTING SYSTEMS
The unit of measurement shall be sum for the designing, planning, supply and installation of all materials including fittings, executing temporary works, permanent works and everything else necessary for connecting to the existing system.
The main water reticulation system (40mm diameter pipes or greater) shall be tested to a pressure of 1.5 times the maximum working pressure before connection to the municipality supply. The pressure test shall be considered successful if leakage rates below those recommended by the pipe manufacturer are achieved. The tenderer must make full allowance in his rates for all costs associated with the testing.

PS20 VALVES AND PIPES
All valves and pipes must be SANS approved. All pipes and fittings must be purchased from supplier and manufacturer approved by the engineer which approval shall not be unreasonably withheld.
All valve bodies shall be factory tested according to SANS 664 at twice the specified working pressure. Mild steel fittings, copon coated internally and externally will be used wherever possible. All valves shall be Class 16 valves, clockwise closing, with non-rising spindle.

PS21 STANDARD SEWER PIPE TEST
Completed sewer pipes shall be air tested in accordance with SANS 1200 LD 7.2. This testing is deemed to be included in the rate for laying the pipe.
Where the Engineer orders random water tests of pipelines they will be paid for separately.
All new manholes or chambers shall be tested for water tightness. All visible leaks shall be made good and any pipe, special or fitting found to be defective shall be removed and replaced at the Contractor's expense.
Payment for water used in testing of manholes must be allowed for in the rates for construction of manholes.

PS22 RAINFALL FIGURES
The Contractor shall keep daily rainfall records and submit them to the Engineer at every site meeting. No additional payment shall be made for the supply and installation of the rain gauge or for the keeping of the rainfall records and all costs must be included in the appropriate items.

PS 23 RECORDING OF WEATHER
The Engineer shall indulge the extent of the delays that are attributable to "abnormal climatic conditions" in terms of Clause 47 as amended.
The reading of the rain gauge shall be made at 08h00 of each working day of the contract. The records shall be submitted weekly to the Employer's Agent (the Engineer), together with a statement recording the Contractor's opinion of the effect on his programme of any weather condition that he may consider to be abnormal.

PS24 WORKMANSHIP AND QUALITY CONTROL
The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and of the Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced engineers, foremen, surveyors, materials technicians, or any other technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the quality of the Works at all stages of the Contract.

The cost of the Contractor's supervision and process control, including all testing carried out by the Contractor, will be deemed to be included in the rates tendered for the various items of work.
Upon completion and submission of each portion of the Works to the Engineer for examination, the Contractor shall furnish the Engineer with the results of the relevant tests, measurements and levels, thereby indicating compliance with the Specifications.
The contractor shall engage the services of an approved independent laboratory to undertake all testing of materials. The Contractor shall promptly provide the Engineer with the results of all such testing carried out by the independent laboratory. The results of which will be used by the Engineer in

deciding on whether the quality of materials utilised and the workmanship achieved by the Contractor complies with the requirements of the Specifications.

The Engineer shall be entitled at times during the Contract, to require that the Contractor arrange with the independent laboratory to carry out any other tests he may require, at times and locations as the Engineer shall prescribe. The contractor shall promptly and without delay, arrange with the laboratory for the carrying out of such additional testing as required, and test results shall be promptly provided to the Engineer.

PS25 ENVIRONMENTAL AND SAFETY

PS25.1 ENVIRONMENT

The contractor shall make an effort to acquaint his employees with all provisions, regulations and prohibitions of good environmental practices, and shall accept sole liability for due compliance with the duties, obligations and prohibitions and absolve the Employer from being obliged to comply with the aforesaid duties, obligations and prohibitions.
In case of failure on the part of the Contractor to comply with any Environmental requirements, the Employer shall be entitled to employ and pay other persons to carry out any remedial work to rectify any consequence resulting from the non-compliance by the Contractor and shall be recoverable from him by the Employer. If it is not practical to rectify any consequence resulting from the non-compliance of the Contractor, the Employer will be entitled to impose a penalty on the Contractor which penalty shall be in relation to the expense which the Contractor would have incurred to comply.

PS25.2 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

The Employer and the Contractor hereby agree, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act, Act No. 85 of 1993, hereinafter referred to as “The Act”, that the Contractor, as an Employer in his own right and in his capacity as Contractor for the execution of the works, shall at all times comply with the requirements and procedures set out in the Agreement in terms of the OHS ACT.

The Contractor shall complete the agreement form included, and therein designate in writing the name of the responsible person required in terms of the General Safety Regulations R11 sub-clause1.

PS25.3 SAFETY

The contractor shall comply with all safety regulations as per legislation. The Contractor shall compile a Health and Safety Plan.

Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor’s obligations there under, the Contractor shall at his own expense, unless stated otherwise, provide the following:

a) Provide to his Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the OHS Act, 1993 (Act No 85 of 1993) as amended, at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;

b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;

c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the ACT at all times;

d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the Site of Works.

e) Full compliance with all other requirements pertaining to safety as may be deemed fit.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the Act. For this purpose, the Contractor shall grant full access to the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer and/ or Engineer may reasonably require.

Where any such investigations reveal, or where it comes to the Employer's attention that the Contractor is in any way in breach of the requirements of the Act, or is failing to comply with the provisions of this clause, the Employer shall, be entitled to suspend progress on the works on any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Employer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for the extension of time and/ or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of clause 5.13.1 of the General Conditions of Contract, should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and /or this clause shall constitute grounds for the Engineer to act in terms of clause 55 of the General Conditions of Contract and for the Employer to cancel the Contract in accordance with the provisions of the said clause 9.2.

PS 25.4 SAFETY OFFICERS

Provision has been made in the schedule of Quantities for a Safety Officer. The unit of measurement shall be month.

The tendered rate shall include full compensation; payable on a monthly basis, to provide a full-time qualified and suitably experienced, independent safety officer on the Site for the full duration of the project.

The safety officer's remuneration shall, apart from his monthly salary, include all necessary normal fringe benefits applicable to such job description to enable the safety officer to fulfil his task in the best manner possible and to comply with the environmental plan requirements. The rate tendered shall also include all additional charges required by the Contractor for profit, management, etc and shall be an all-inclusive monthly rate.

The safety officer shall have a sound knowledge of the Occupational Health and Safety Act. He shall preferably have completed the Safety management Training Course (SAMTRAC) presented by NOSA. The Contractor shall submit details of the proposed candidate(s) to the Engineer, who will select a person who meets the required criteria.

PS25.5 KEY PERSONNEL

The contractor shall furnish the Employer and the Engineer, upon request, with a list of home addresses and telephone numbers of key personnel in the Contractor's organization who may be contacted both during and outside normal working hours in connection with the works.

PS 25.6 PROTECTION OF THE PUBLIC

Operations are being conducted in an urban area and in the presence of passing traffic. Precautions shall be taken to protect the public and to prevent unnecessary noise, dust or another nuisance. Any rock or debris falling from trucks on the roads in use by the public shall be removed immediately. Precautions shall be taken to prevent fouling of public roads and of completed construction by trucks transporting muddy material. The Engineer may order the Contractor to broom off and clean roads continuously where the mud tracking of vehicles or falling debris may constitute a danger to the travelling public.

PS25.7 BLASTING INDEMNITY

The contractor may require to blast rock from time to time during the implementation of this contract. The use of a certified Blasting Contractor as subcontractor is paramount to the safety of the surrounding public, people and property. When blasting in the close proximity of fixed structures, the Contractor shall take full responsibility for any costs related to damage thereof. It is in this context that the Contractor should fully photograph and record any structural damages prior to blasting.
It is a requirement of this contract, that the Contractor should complete the "Blasting Indemnity Form", before the commencement of the Works.

PS25.8 BARRICADES AND LIGHTING

The contractor is responsible for compliance with all the requirements of the authorities concerned with the respect to the safety of the Works, labourers, and the public. Any negligence or non-compliance on the part of the Contractor shall be sufficient cause for the Employer's Agent to suspend the Works and the Contractor shall have no claim for additional compensation against the Employer in such an event.

PS25.9 POLLUTION PREVENTION AND INTERFERENCE WITH ACCESS

The contractor's attention is drawn to the requirements of SANS 1200 D and the General Conditions of Contract regarding the silencing of plant and the prevention of dust. He shall also take special care for the safety of the general public.
All operations necessary for the execution of the Works shall, as far as possible, comply with the requirements of the contract. They should be carried out in such a way as not to cause unnecessary noise or pollution, or to interfere unnecessarily with public services or private properties.

The contractor will be held responsible for any claims or damages resulting from incidents such as the following:

(i) Excessive dust.
(ii) Burning of the veld or grazing.
(iii) Damage to fauna and flora.
(iv) Damage to private property.
(v) Uncontrolled dumping.
(vi) Noise and vibration from blasting.

PORTION 2: VARIATIONS AND ADDITIONS TO THE STANDARDISED SPECIFICATIONS PSA GENERAL

PSA 1 SCOPE

REPLACE SUBCLAUSE 1.1 WITH THE FOLLOWING:

"1.1 This specification covers requirements, principles and responsibilities of a general nature that are normally applicable to all Civil Engineering Contracts, as well as the requirements for the Contractor's establishment on the Site."

PSA 2 INTERPRETATIONS
PSA2-2 Applicable edition of standards. (Subclause 2.2)
Add at the beginning of Subclause 2.2:
"Unless a specific edition is specified (see the List of Applicable Specifications)

PSA 2.3 DEFINITIONS

General
ADD THE FOLLOWING DEFINITIONS:

"General conditions: The General Conditions of Contract specified for use with this Contract, and the Contract Data.
Specified: As specified in the standardized and standard specifications, the Drawings or the Scope of Work.
Measurement and Payment

REPLACE THE DEFINITIONS FOR "fixed charge", "time-related charge" AND "value-related charge"

WITH THE FOLLOWING:
"Fixed charge: A charge that is not subject to adjustment on account of variation in the value of the Contract price or the Contract Time of Completion.
Time-related charge: A charge, the amount of which varies in accordance with the Time for Completion of the work, adjusted in accordance with the provisions of the Contract.
Value-related charge: A charge, the amount of which varies pro rata with the final value of the measured work executed and valued in accordance with the provisions of the Contract."

PSA 3 MATERIALS

PSA 3.1 QUALITY

ADD THE FOLLOWING:

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified in accordance with SANS Specifications shall bear the SANS mark, whether so specified or not."

"PSA 3.3 ORDERING OF MATERIALS
The quantities set out in the Bill of Quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be approximate quantities only. Before ordering materials of any kind the Contractor shall check with the Engineer whether or not the scope of the work for which the materials are required is likely to change substantially. No liability or responsibility whatsoever shall be attached to the Employer for materials ordered by the Contractor except when ordered in accordance with written confirmation issued by the Engineer."

PSA 4 PLANT
PSA 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES

"The Contractor's construction camp shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. The camp shall always be kept in a neat and orderly condition.”

"One chemical toilet per 10 workmen shall be provided and must be screened from public view and its use shall be enforced. The Contractor shall, where applicable, make the necessary arrangements for the removal of night soil." A First Aid cabinet fully equipped and maintained with at least the minimum contents as listed in the Annexure (Regulation 3) to the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), to deal with accidents and ailments which are likely to occur during the construction period. The Contractor shall provide personal safety equipment and facilities as required by Regulation 2 of the General Safety Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

PSA 4.3 CONSTRUCTION PLANT
Construction plant shall be of a suitable type for carrying out the work for which it is required. Its capacity shall be sufficient to meet the requirements of the work within the contract time. It shall be kept at all times in full working order and repair. If the Engineer considers that the plant in use is in any way inefficient or is inadequate in capacity, he shall have the right to call upon the Contractor to provide such additional plant or equipment as may be required to meet the needs of the Works.

PSA 5 CONSTRUCTION

PSA5.1.1 SETTING OUT OF WORKS

The contractor shall employ a competent surveyor to set out the works accurately. No setting out of works will be done by the Engineer. It is the contractor's responsibility to set out his works, to check the values of the benchmarks and invert levels of all existing works into which the proposed works must tie in. No claim or extension of time for incorrect setting out or checking of benchmarks or invert levels will be considered.

PSA5.1.3 Drawings and details

Tender drawings shall not be used for construction purposes. Construction drawings and additional detailed information will be made available to the Contractor as and when required by him.

PSA 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS
(ref. PSA8-7, PSDB8-2)

The Contractor shall be responsible for the protection of persons, animals, vehicles and property from injury or damage by reason of the works, and shall employ competent watchmen and guard the works both by day and by night. The Contractor shall provide, erect and maintain adequate warning signs, fences, barricades, guard rails, temporary bridges and other protective measures as may be necessary from time to time to the approval and satisfaction of the Engineer.
Where excavations require barricading, this shall be done by means of at least three 18mm diameter hemp ropes or No. 8 S W G wires stretched tightly between suitable supports along both sides and ends of the excavation at approximately 500mm, 800mm and 1 200mm above the ground.
The support shall consist of poles or iron standards securely planted in solid ground so as to enclose the spoil from the excavations and shall be not more than 15m apart. White washed panels or red flags measuring at least 300mm x 300mm shall be attached between the upper and middle strands at the ends of excavations and along the length of the barricades at distances not exceeding 15 meters.
Where vehicular or pedestrian crossing is required over an open excavation, it shall be protected on either side by a stout two rail timber fence at least 1 000mm high, consisting of 150mm x 75mm deal verticals set 600mm into the ground with 75mm x 50mm rails securely nailed to them. Where deals or boards are used as bridges, they must be battened underneath to prevent tipping.
Lamps in good order and continuously lit from dusk to dawn shall be provided to clearly define all excavations which, in the opinion of the Engineer constitute a hazard; generally, the spacing of these shall not exceed 15 meters, and in addition at least four lamps shall be provided at each temporary crossing. All poles and warning notices shall be clearly marked by means of an approved reflecting material.

PSA 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

REPLACE THE HEADING AND THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"PSA 5.4 LOCATION AND PROTECTION OF EXISTING SERVICES

PSA 5.4.1 Location of existing services
(Ref, PSA8-9, PSDM8-5)
Before underground or excavation work is carried out, the Contractor shall ascertain the presence and position of all services likely to be damaged or interfered with by his activities. The Contractor shall determine the exact position of such services by means of suitable detecting equipment and afterwards by careful hand excavation where necessary in order to expose the services at the positions of possible interference by his activities. This procedure shall also be followed in respect of services not shown on the plans but believed to be present.

All such services, the positions of which have been located at the critical points, shall be designated as 'known' services and their positions shall be indicated on a separate set of Drawings, a copy of which shall be furnished to the Engineer.

While he is occupying the Site, the Contractor shall be liable for all damage caused by him to known services as well as for consequential damage, whether caused directly by his operations or by the lack of proper protection.

All services, in particular cables, shall be treated as live until proven otherwise. Before the commencement of any excavation the Contractor shall confirm the name and telephone number of the relevant officials directly concerned with the known or suspected services, shall acquaint himself with the position of the control points of the services and shall have readily available equipment necessary to shut off and isolate any such service. The Contractor shall liaise with the relevant authorities or controlling bodies for the necessary temporary closure of any services during construction. A meeting to discuss and confirm the accommodation and protection of services will be arranged before construction commences. The Contractor shall not commence work in any area until proper arrangements have been made for supervision of the work by the relevant authority.

Before commencing any excavation for trenches or road works in a specific area, the Contractor shall locate all existing services with the co-operation of the relevant authority, carefully excavate by hand and expose and survey such services, If the information regarding any existing service is given in the drawings is either missing, incomplete or erroneous, the Contractor shall, as soon as the service has been located, submit details of the exact location, depth and type of service in writing to the Engineer.

Before any work that involves services to any property is carried out, the Contractor shall serve notice on the resident, occupier and / or owner of every property, at least 3 working days in advance of any temporary disconnection, advising the nature, time and duration.

The Contractor shall deal with the crossing of known existing services by the pipelines by:

a) Notifying to the Engineer’s Representative and the relevant authority 48 hours prior to executing the work.

b) Serving notice on the resident, occupier and / or owner of every property affected at least 36 hours in advance of any temporary disconnection, advising the nature, time and duration.

c) Excavating by hand, under the supervision of the Engineer’s Representative and / or the authority involved, on the line of the trench up to 2 m, or such for the distance as may be necessary, in both directions from the indicated position of the services.

Before any excavations take place near electrical cable routes, the Contractor shall ensure that wayleaves from the relevant authorities have been obtained. Eskom and Telkom SA insist that no mechanical excavators or vibratory compaction equipment be used within 3 m of their services. Notice must be given at least 2 working days in advance of any work close to their services.

After the site has been handed over, the Contractor shall ascertain the names and telephone numbers of persons to be contacted at each service authority in the case of damage to services. These numbers shall be prominently displayed in the Contractor's site office, preferably near the telephone or radio, before the first payment certificate will be issued.

When damage to an existing service occurs, the Contractor shall immediately contact the relevant service authority after which he shall notify the Engineer or his representative who will investigate the matter and determine liability of the damage. All known existing services and those services which require relocation and protection are shown on the drawings. The Contractor's attention is drawn to the fact that these drawings are based on information supplied by others, and the accuracy and completeness of this information has not been confirmed. The Contractor will therefore be required to verify the accuracy of the information and proceed with extreme caution in order to avoid damage to existing services.

In general, the Contractor may be called upon by the Engineer to expose and locate the exact position of services for the purpose of avoiding damage or for the service authority to establish the necessity for relocation.

The Contractor may also be called upon to re-excavate and backfill trenches previously excavated and backfilled by others where in the opinion of the Engineer such work is necessary to ensure the stability of any other works over such trenches. This action in no way relieves the Contractor of his responsibility in terms of the specified works.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified or ordered, the Contractor shall not carry out alterations to existing services. When this is necessary, the Contractor shall inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service or instruct the Contractor to make such arrangements himself.

When existing services are damaged by the Contractor, he shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases the Contractor shall take the necessary steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted.

The Employer will accept no liability for damages due to a delay in having such alterations or repairs effected. The Contractor shall provide all reasonable opportunity, access and assistance to persons carrying out alterations or repairs of existing services."

PSA5.8 GROUND AND ACCESS TO WORKS

The contractor shall conduct and maintain temporary roads and vehicular traffic deviations as may be necessary, erect barriers and traffic signs and apply traffic markings on existing and temporary surfaces as may be directed by the Engineer, to ensure the free and safe flow of traffic at all times and shall remove the same on completion of works. The contractor shall allow the necessary access to all private properties, which may be affected by the works.

"PSA 5.9SITE MEETINGS

The Contractor will be required to attend regular site meetings, normally held once a month to discuss general progress, quality of work, problems, claims, payments, and any other matters concerning the day-to-day running of the Contract."

PSA 6 TOLERANCES
"PSA 6.4 GENERAL

No guarantee is given that the full specified tolerances will be available independently of each other,

and the Contractor is cautioned that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.
Except where the contrary is specified or when clearly not applicable, all quantities for measurement and payment shall be determined from the 'authorised' dimensions. These are specified dimensions or those shown on the Drawings or, if changed, as finally prescribed by the Engineer, without any allowance for the specified tolerances.

Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorised' dimensions.
If the work is therefore constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, quantities will be based on the 'authorised' dimensions regardless of the actual dimensions to which the work has been constructed.
When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be based on the actual dimensions as constructed."

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 MEASUREMENT
PSA 8.1.2 Preliminary and general items

PSA 8.1.2.2 Bid sums
REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:
"The Contractor's bid sums under items PSA 8.3 and PSA 8.4 shall collectively cover all charges for

- risks, costs and obligations in terms of the General Conditions of Contract, the Contract Data and of this Standardised Specification, except where provision is made in these Project Specifications to cover compensation for any of these items;

- head-office and site overheads and supervision;
- profit and financing costs;
- expenses of a general nature not specifically related to any item or items of permanent or temporary work;
- providing facilities on Site for the Contractor's personnel, including offices, storage facilities, workshops, ablutions, for providing services such as water, electricity, sewerage, sewage and rubbish disposal, for access roads and all other facilities required, as well as for the maintenance and removal on completion of the Works of these facilities and the cleaning-up of the camp site on completion of the Works;
- providing facilities for the Engineer and his staff as specified in SANS 1200 AB and in these Project Specifications"

PSA 8.2 PAYMENT
PSA 8.2.1 Fixed-charge and value-related items
REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"Payment of fixed charges in respect of item 8.3.1 will be made as follows:
Eighty per cent (80%) of the sum bid will be paid when the facilities have been provided and approved. The remaining 20% will be paid when the facilities have been removed and the camp site has been cleared and cleaned.
Payment for the sum bid under item 8.3.2 will be made in three separate instalments as follows:

a) The first instalment, which is 40% of the sum, will be paid when the Contractor has

fulfilled all his obligations to date under this Standardised Specification, the General Conditions of Contract and the Contract Data, and when the value of work certified for payment, excluding materials on Site and payments for preliminary and general items, is equal to not less than 5% of the total value of the work listed in the Bills of Quantities.

b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention monies but excluding this second instalment, exceeds 50% of the work.

c) The final payment, which is 20% of the sum, will be made when the works have been certified as completed and the Contractor has fulfilled all his obligations to date under this Standardised Specification, the General Conditions of Contract and the Contract Data.

d) Should the value of the measured work finally completed be more or less than the Bid Sum for the work, the sum bid under item 8.3.2 will be adjusted up or down in accordance with the provisions of Clause 47 of the General Conditions of Contract as amended in Part 1 of the Contract Data, and this adjustment will be applied to the third instalment. No adjustment will apply to item

8.3.1 in respect of variations in the value of work done or after the finally authorised Time for Completion."

PSA 8.2.2 Time-related items

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:
"Subject to the provisions of Subclauses 8.2.3 and 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum bid for the item by the period for the construction in months, provided always that the total of the monthly amounts so paid for the item is not out of proportion with the progress of the work on the installation as a whole.
Should the Engineer grant an extension of Time for Completion of the works, the Contractor will be entitled to an increase in the sum bid for the time-related item, which increase shall be in the same proportion to the original sum bid as the extension of time is to the original Time for Completion of the repair works.
Payment of such increased amounts will be deemed full compensation for all additional time-related preliminary and general costs due to the circumstances pertaining to the extension of time granted for the works.
Time-related payment shall only be made when the work is in progress and shall end when the time for completion or an extension of time granted by the Engineer expires."

PSA 8.3 BILLED FIXED-CHARGE AND VALUE-RELATED ITEMS
PSA 8.3.1 Fixed preliminary and general charges Unit: Sum
PSA 8.3.2 Value-related preliminary and general charges Unit: Sum
The sums bid shall include full compensation for all fixed and value-related preliminary and general charges as described in Subclause PSA 8.1.2.2. Payment will be made as described in Subclause

PSA 8.2.1."
PSA 8.4 BILLED TIME-RELATED ITEMS

PSA 8.4.1 Time-related preliminary and general charges:
a) Item Unit: Sum
The sums bid shall include full compensation for all time-related preliminary and general charges as described in Subclause PSA 8.1.2.2. Payment will be made as described in Subclause PSA 8.2.2.

PSA 8.5 SUMS STATED PROVISIONALLY BY ENGINEER

b) Special testing of materials:
(i) Provisional Sum for special testing of materials by an approved independent laboratory shall include traveling expenses and supply of a certified copy of test results Unit : Provisional Sum
(ii) Percentage mark-up on item (e) (i) above for Contractor's overheads, administration charges and profit Unit : Percentage (%)
The Contractor shall be reimbursed the sum or sums actually paid by him in connection with the provision of accommodation, laboratory equipment, services, maintenance and special testing (on production of receipts, statements, vouchers, etc.) and this sum or sums shall be increased by the percentage tendered as mark-up for overheads, administration charges and profit.

PSA 8.6 PRIME COST ITEMS
Amend the penultimate sentence of Subclause 8.6 to read:
"The percentage rate for (b) shall cover the Contractor's overheads, charges for taking delivery and profit on the supply of materials or goods covered by the sums stated in (a) above. Payment will be made on the basis of the sums actually paid for such materials or goods, exclusive of VAT."

PSA 8.7 DAYWORKS
Provisional items for Daywork are scheduled as follows:
a) Labour at hourly rates for skilled, semi-skilled and unskilled labourers.
b) Material as a Provisional Sum with a percentage allowance on the net cost.
c) The Contractor's own plant at hourly rates for various types.
Tendered unit rates or unit rates that are agreed in terms of Subclause 40(4) of the General Conditions of Contract for the Contractor's own plant used for Daywork shall cover the full cost of the use of such plant and shall therefore, in addition to the items listed in Subclause 8.7, cover the cost of plant operators, consumable stores, fuel and maintenance.
d) Hired plant as a Provisional Sum with a percentage allowance on the net cost.
The Contractor will be paid the actual net cost of plant hired by him for Daywork and in addition will be paid a percentage allowance on the net cost of such hire, which allowance will cover the Contractor's own overhead costs and profit.

PSA 8.8 TEMPORARY WORKS
PSA 8.8.2 Dealing with traffic:

Dealing with traffic, the maintenance of access, protection at level crossings and other requirements of PSA5-2 will be covered by Item 1.2.7.

PSA 8.8.4 Location and protection of existing services:

PSA 8.8.4.1 Provision of detecting devices for:
a) Water and sewer pipes Unit: Sum

b) Electrical and other cables Unit: Sum
The bid sums shall cover the cost of providing and operating suitable equipment for as long as it is needed to locate all the existing services likely to be affected by the construction activities. Alternatively, an approved specialist firm may be employed to carry out the work.

PSA 8.8.4.2 Hand excavation necessary for locating and exposing existing services in all material:
a) In roadways Unit: m3

b) In all other areas Unit: m3
The rates shall cover the cost of excavating by means of hand tools within authorised dimensions, for all precautionary measures to protect the services from damage during excavation and backfilling, and for subsequent backfilling and compacting. Compaction of material in all areas except in roadways shall be to 90% of the modified AASHTO density.
The rate for hand excavation in roadways shall include compensation for compacting excavated or

selected backfill material to 93% of modified AASHTO density.

The bid rates shall also include for keeping excavations safe, for dealing with surface and subsurface water, for removing surplus excavated material from the Site, for transporting all material, and for supplying adequate supervision during both excavation and backfilling operations."

PSA 8.9 ADDITIONAL TESTS:
(a) Additional tests required by the Engineer Unit: Sum
(b) Attendance and profit Unit: %

An amount has been allowed in the Bill of Quantities under subitem (a) to cover the cost of additional tests required by the Engineer. The Engineer will have the sole authority to spend the amount or part thereof.
The bid percentage under subitem (b) will be paid to the Contractor on the value of each payment made to the testing authority.
Note in connection with subitem (a):
The Contractor is responsible for both the cost of normal testing as described in Subclause PS 7.8 in portion 1 of the Project Specifications and for the cost of any additional test that indicates that the Specifications have not been complied with.

PSA8.9 ADDITIONAL PAYMENT ITEMS
PSA8.9.1
Protection of survey beacons/stand pegs and submission of certificate from a registered land surveyor.
“The sum tendered shall provide full compensation for protecting all existing survey works during construction, and for the replacement of those found to be disturbed or missing at the end of the contract. It shall also provide full compensation for providing a certificate from an approved registered land surveyor certifying that all pegs/ beacons are correctly placed. Such a certificate shall be submitted to the Engineer prior to the handover of the works or of any section of the works.”

PSA8-9.2 Dealing with existing services
Existing services will not be measured individually. Payment will be made by lump sum. The sum tendered for dealing with existing services shall cover:
- the costs of meeting the requirements of Subclause 8.3.5 of SANS 1200 DB,
- the cost of meeting the requirements of PSA5-2 (excluding the careful excavation to locate a service further than 2 m from the indicated position),
- the costs arising from the limiting influence of existing aboveground and underground services on the Contractor’s activities,
- dealing with and protecting poles affected by excavations and dealing with and working below overhead wires,
- the cost of dealing with and protecting existing services,

- the costs of delays and interruptions in the progress of the work which arises from dealing with and protection of existing services.
  Careful excavation carried out by the Contractor on the instruction of the Engineer to locate and expose existing services of which the exact location is not known, or where the existing service is found to be a further than 2,0 m from the position indicated, will be measured by volume. The rate shall cover all costs of materials, labour and plant, including specialist detecting equipment required to locate and expose the service.

PSA8-9.3 Dealing with water
The cost of supplying and operating the equipment for dewatering of excavations and controlling of

stormwater will be held to be included in the tendered sums for Items 1.12.2 and no separate payment will be made for this work.

PSA8-9.4 Free haul and overhaul
Notwithstanding any clauses in any Standardized Specification or Standard Specification Section dealing with the definition, measurement and/or payment for transport, free haul and/or overhaul, no measurement nor payment for overhaul will be made. All haulage will be considered to be free haul and the cost thereof will be deemed to be covered by the rates for the provision or disposal of the applicable material.

PSA8-9.5 Miscellaneous items
An item which, in the payment clause column of the Schedule of Quantities, refers to this clause, will be measured in the unit scheduled.
The sum or rate for such item shall cover the cost of all materials, labour and plant required to execute and complete the work as specified, described in the Schedule of Quantities or shown on the drawing(s).

PSA 8.13 COMPLIANCE WITH OHS ACT AND CONSTRUCTION REGULATIONS 2003
Unit: sum
The bid sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and the Construction Regulations 2003 at all times as described in PS 25 of Portion 1 of the Project Specifications. The successful bidder shall provide the Engineer with a complete breakdown of this bid sum.
This sum will be paid to the Contractor in equal monthly amounts for the entire duration of the contract period.

PSA8.14 ITEMS NOT MENTIONED
Should the tenderer wish to price any fixed charge or time related obligations, arising out of the work described in the Contract Documents but not specifically mentioned in the Schedule of Quantities, he is to do so in the spaces provided in Section 1 of the Schedule.

PSAB ENGINEER'S OFFICE PSAB 3 MATERIALS
PSAB 3.1 NAMEBOARDS

REPLACE THE FIRST SENTENCE OF SUB-CLAUSE 3.1 OF SANS 1200AB WITH THE FOLLOWING:
"The Contractor shall supply and erect at locations approved by the Engineer, the number of contracts nameboards specified in Portion 1 of the Project Specifications, which, unless otherwise specified in the Contract, shall comply with the recommendations for the standard board of the South African Association of Consulting Engineers, with regards to size, painting, decorating and detail, and the requirements described hereunder."

PSAB 3.2 OFFICE BUILDING(S)
The Contractor shall provide and erect one office for the Engineer in accordance with Subclause 3.2, in the position indicated by the Engineer.
A concrete floor will be permitted for the office provided that it is covered with linoleum. All windows in the office shall be fitted with blinds and burglar proofing over the entire glazed area, and with fly screens over the openings.
In addition to the furnishings specified in Subclause 3.2, the following facilities shall be provided for the office:
plan cabinet (steel) or suspension rack
A power sockets,
1 x air conditioner for warm/cool air, with a cooling capacity of at least 2,0 kW.

The toilet shall be of the chemical type.
ADD THE FOLLOWING SUB-CLAUSES:

PSAB3-3 Latrine and ablution facility
The Contractor shall provide, maintain and service one ablution room for the exclusive use of the Engineer. The toilet shall be of the chemical type.

PSAB3-4 Protective clothing
The Contractor shall provide and replace when necessary six sets of safety helmets and rubber wellington boots (of sizes as required) to members of the Engineer's site staff and his visitors.

PSAB 3.5 CAR-PORT
The Contractor shall construct the number of carports indicated in Portion 1 of the Project Specifications, for the sole use of the Engineer and his staff. Each car-port shall be constructed so that the vehicle parked under it is always protected against the direct rays of the sun. The carport area shall be at least 20 m2 and the floor shall be covered with a layer of crushed stone to alleviate dusty and muddy conditions. The carport(s) shall be positioned so as to provide easy and convenient access to the Engineer’s office."

PSAB 4 PLANT

PSAB 4.1 TELEPHONE
REPLACE THE WORDS: "Department of Post and Telecommunications" WITH "Telkom" AND ADD THE FOLLOWING AT THE END OF SUBCLAUSE 4.1 OF SANS 1200 AB:
"In addition to a Telkom telephone and subject to satisfactory transmission and reception quality in the vicinity of the Site, the Contractor shall provide the number of cellular telephones and associated service contracts from a reputable cellular service provider, as specified in Portion 1 of the Project Specifications, for the exclusive use of the Engineer and his staff."
ADD THE FOLLOWING NEW SUBCLAUSES TO CLAUSE 4 OF SANS 1200 AB:

PSAB 4.3 TELEFAX FACILITIES
Subject to the availability of Telkom lines, the Contractor shall provide and install in the Engineer’s office referred to in Subclause PSAB 3.2, one plain paper fax machine for the exclusive use of the Engineer and his staff. The Contractor shall provide all consumables such as paper, and ink and toner cartridges as may be necessary for the proper operation of the fax machine.

PSAB 4.4 SURVEY EQUIPMENT
The Contractor shall provide on-site and make available for the exclusive use of the Engineer and his staff, the survey equipment listed in Portion 1 of the Project Specifications.
All survey equipment provided by the Contractor shall be in good condition, properly calibrated and fit for the purpose. In addition to survey equipment provided by the Contractor for the exclusive use of the Engineer and his staff, the Contractor shall make available for use by the Engineer, the further survey equipment listed in Portion 1 of the Project Specifications, at all times when such is reasonably required by the Engineer and his staff for the purposes of the Contract."

PSAB4-5 MEDICAL FACILITIES AND SAFETY EQUIPMENT
The Contractor shall make the first aid services and such personal safety equipment and facilities as are required in terms of PSA4-2, available to the Engineer and his site staff.

PSAB 5 CONSTRUCTION
PSAB5-1 Nameboards (Subclause 5.1)
The nameboards shall be removed by the Contractor before the issue of the Final Approval Certificate.

PSAB5-3 Key personnel (Subclause 5.3)
The Contractor shall inform the Engineer of the person whom he has charged with the duties with respect to the Site in terms of the Occupational Health and Safety Act and the person(s) who are in possession of a valid certificate of competency in first aid. The Contractor shall give copies of the minutes of the site safety meetings to the Engineer.

PSAB 5.4 TELEPHONE
REPLACE THE CONTENTS OF SUBCLAUSE 5.4 OF SANS 1200 AB WITH THE FOLLOWING:

"PSAB 5.4.1 Telkom telephones
The Contractor shall advise Telkom promptly of any faults which develop in the telephone service and shall, in such circumstances, arrange for the earliest possible restoration of the said service. The Contractor shall ensure that the telephone account is promptly paid.

PSAB5-5 Assistants (Subclause 5.5)
In terms of Subclause 5.5, two suitable workmen, with minimum qualifications of Matric (Grade 12), to be used as general assistants and to assist with control testing shall be made available to the Engineer during working hours as and when required. As far as practical the same assistants shall be allocated to the Engineer for the full duration of construction.

ADD THE FOLLOWING NEW SUBCLAUSES TO CLAUSE 5 OF SANS 1200 SB:
PSAB 5.8 SURVEY EQUIPMENT
All survey equipment provided by the Contractor shall be kept fully serviceable at all times by the Contractor. The Contractor shall have any defective equipment repaired or replaced at his own cost within 24 hours after notification by the Engineer's staff. Where required by the Engineer, the Contractor shall at his own cost, promptly arrange for the re-calibration of survey equipment provided."
PSAB5-9 SITE instruction book
Throughout the construction period the Contractor shall supply a carbon quadruplicate book as a site instruction book.
This book shall be kept on Site and shall be accessible to both the Contractor and the Engineer at all times. It shall be used:

a) by the Contractor for providing the Engineer with any information regarding the construction of the Works which may be requested, and giving notification in writing of inspections, drawings, etc, required by the Contractor, and

b) by the Engineer for the purpose of writing day-to-day instructions and confirming any verbal information or instructions given to the Contractor.
One copy of each site note issued shall remain in the book.

SANS 1200 C: SITE CLEARANCE

PSC-3.1 DISPOSAL OF MATERIALS

The Contractor shall locate and negotiate for tipping sites for the disposal of surplus material and bear all costs in connection therewith. Arrangements for the consent of the owner of a property to deposit spoil thereon shall be confirmed in writing. Such arrangements shall be approved by the Engineer before being implemented. The Contractor shall during the period of the Contract remove any accumulation of surplus earth, rock, clay, soil, bricks, tree trunks, rubbish, waste or unused material being the property of the Contractor or the result of his activities and not required for the construction of the Works. These surplus materials shall be spoiled not later than 48 hours after having been excavated, demolished, felled or attached from their original location.

PSC5 Construction
PSC5-1 Areas to be cleared and grubbed. (Subclause 5.1)
Only the approved minimum area required for the execution of the Works including areas on which material shall be stockpiled for later reuse or on which material shall be dumped and spread, shall be cleared and grubbed. Where excavations are required under existing concrete or brick paved areas the existing concrete surfacing shall be neatly cut with a suitable or brick surfacing shall be carefully removed, stacked and cleaned for reuse. Where excavations take place under road surfaces the

bitumen surfacing shall be neatly cut with a suitable blade and the surfacing material removed within the limits of the excavation and discarded at the disposal site. For the pipe trenches indicated by the Engineer, generally a sufficiently wide strip equal to the trench width plus the estimated allowance for trench side slopes plus the width of stockpiled backfill and a 600 mm width (which shall be maintained alongside the trench) plus the width of access to the trench shall be cleared of vegetation. All rubble on the Site shall be disposed of as directed by the Engineer.

PSC5.2.3.2 INDIVIDUAL TREES
Individual trees shown on drawings, or indicated by the Engineer, are to be left undamaged. A fine of R1000.00 will be payable per such a tree that is removed or felled.

PSC5-6 Conservation of topsoil. (Subclause 5.6)
Topsoil up to a depth of 150 mm, if available, shall be removed from the above specified cleared areas and stockpiled on approved sites for later reuse. Until required for spreading, the stockpiles of topsoil material shall be stabilized by watering or other approved means.

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSE 5:
PSC5-9 Demolition of existing manholes, catchpits, chambers and pipe outlets (ref. PSC8-2)
Where shown on the drawings or ordered, manholes, catchpits, chambers and pipe outlets shall be demolished. All metal fittings shall be salvaged and delivered to the Employer's yard. All other rubble shall be disposed of to the approval of the Engineer.

The resulting void shall be backfilled with material of a quality, and compacted to a density, at least equal to that of the adjacent material.

PSC8 Measurement and payment

PSC8-2.7Removal of pipes. (Subclause 8.2.7)
In addition to the requirements of Subclause 8.2.7, the rate shall cover the cost of locating the pipeline and any additional costs of excavation and backfilling not covered by other normal rates for excavation and backfilling under SANS 1200 DB.

PSC8-2.8 Demolish existing manholes, catchpits, chambers and pipe outlets. (Subclause 8.2.8) (ref. PSC5-9)
In addition to the requirements of Subclause 8.2.8 the rate shall cover the cost of excavation and demolition of the scheduled unit, salvaging and delivery of metal fittings, complete removal of all rubble from the Site, and the supply of material for and backfilling of the voids so formed, including compaction, all to the satisfaction of the Engineer.

PSC8-2.10 Removal and conservation of topsoil. (Subclause 8.2.10)
The rate tendered for the removal of in situ topsoil shall, in addition to the items listed in Subclause 8.2.10, also cover the cost of stabilizing and protecting the stockpiles of topsoil.

1200 D : EARTHWORKS PSD 3MATERIALS
PSD 3.1.1CLASS OF EXCAVATION
Classification of the suitability or otherwise of material for excavation by hand and the excavation category (soft, intermediate or hard) of material suitable for excavation by hand will be based on dynamic cone penetrometer evaluation in accordance with the following criteria:

CONSISTENCY		DPPC BLOWS	
Granular	Cohesive	Granular	Cohesive

SUITABLE FOR HAND EXCAVATION SOFT
Soft excavation shall be exaction in material that can be efficiently removed from the

trench using a Up to medium dense Firm to stiff 0-6 1-5 pick and shovel but not requiring prior breaking using mechanical equipment such as pavement breakers
UNSUITABLE FOR HAND EXCAVATION

CATEGORY OF MATERIAL CONSISTENCY DCP BLOWS
Granular Cohesive Granular Cohesive

SUITABLE FOR HAND EXCAVATION SOFT
Soft excavation shall be exaction in material that can be efficiently removed from the trench using a pick and shovel but not requiring prior breaking using mechanical equipment such as pavement breakers. Up to medium dense Firm to stiff 0-6 1-5

UNSUITABLE FOR HAND EXCAVATION ROCK
Rock excavation shall be excavation in material other than described above which by nature of the material requires prior breaking by means of blasting. >50

The category of material shall be determined by testing the material at regular intervals and at depths along the centre line of the trench. A minimum of 5 tests shall be done at each location and the average number of blows of the tests shall be used to determine the category of material.

The interval between test locations shall be determined by the variation of material type but shall not exceed 50m. The depth of testing shall be determined by the variation of material type and can increase or decrease in hardness with increasing depth of excavation.

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

PSD 3.3.2 BACKFILLING AND EMBANKMENTS
The reference to "free haul distance" shall be amended as follows:

The free haul distance for the material to be disposed of as surplus or unsuitable shall be the full distance from the site of the works to the Contractor's tipping site.

PSD 5 CONSTRUCTION
PSD 5.1.1.1 BARRICADING AND LIGHTING

The Contractor shall light and barricade all materials, excavations and objects, which constitute an obstruction or danger to the public as a result of his operations.

Watchmen shall be on duty at night at each end of every closed carriageway and shall be provided with red and white lamps with which to direct and control the traffic using the open portion of the road. Conspicuous notice boards marked "CLOSED ", lighted between sunset and sunrise, shall be placed at each end of all closed or partially closed roads.

In addition to the above, the following shall apply to all excavations:

a) Barricading supports shall be portable and self-standing i.e., such as not to disturb the existing surface.

Horizontal planks shall be at least 100mm wide, painted in red and white chevrons and shall be fixed to the support at heights of 0,45m, 0,75m and 1,25m above the ground.

When erected, the system shall be rigid and properly ballasted to prevent being blown over and shall present a neat and orderly appearance.

The Engineer must approve the system of barricading, either as specified above or an alternative before excavations commence.

It should be noted that chevron plastic tape alone is not regarded as adequate protection around excavations and its use for that purpose shall not be approved.

The use of the "fluorescent orange plastic netting" will be considered provided the support system complies with the requirements of the Occupational Health and Safety Act (OHS Act).

b) At night, red lights shall be placed at each end of every trench under construction and at intervals not exceeding 15m along barricades.

The proximity of streetlights shall not relieve the Contractor of any responsibility in respect of barricading and lighting.

c) All signs and barricades shall be inspected every day before the morning and evening peak traffic periods and at least once during the day. The competent person, appointed by the Contractor in accordance with OHS Act, shall accept responsibility for ensuring that these inspections are carried out.

d) Warning lights and barricading components, which are damaged, disturbed, lost or stolen, shall be replaced and repositioned by the Contractor immediately at his own expense.
The Contractor shall comply with the COP, Section 3, save where the requirements of the code are varied by Portions 1 and 2 of the Project Specification.

Should the Contractor fail to provide adequate lighting, signing and barricading, or access to properties, or leaves the site in a dangerous condition, the Engineer shall be entitled to:

i) Suspend all work under the Contract until, in the Engineer's opinion, theContractor's obligations in these respects have been fulfilled.

ii) Arrange for any emergency work to be carried out by some other agency and to deduct the cost of this work from any monies due to the Contractor
PSD 5.1.1.2 SAFEGUARDING OF EXCAVATIONS

Replace the reference in subclause (a) to the Machinery and Occupational Safety Act with the Occupational Health and Safety Act.

g) Loose ground, materials, tools and appliances shall be kept clear of the edge of the excavations and a pathway, at least 0.30m wide, shall be left clear around such edge.

h) The Contractor shall be solely and entirely responsible for maintaining excavations in a safe condition and his responsibility shall in no way be diminished by any instruction by the Engineer to take additional or improved protection or precautionary measures.

He shall be responsible for the design and installation of all shoring to comply with all safety regulations of the Occupational Health and Safety Act and, in addition, the provision of sufficient lateral support to avoid damage to adjacent structures, services or road surfaces. Shoring for the excavations shall be installed progressively as the excavations proceed.

No separate or additional payment shall be made for timbering and shoring and allowance must be made for this work in the Schedule Rates for excavation.

Timbering, shoring, etc., directed to be left in the excavations will be paid for at the scheduled rates.
PSD 5.1.1.3 EXPLOSIVES
The Contractor shall, in his own interest, inspect all structures that may be affected by blasting operations, prior to such operations taking place.

Explosives shall not be used without the written permission of the Engineer. The Contractor shall record for the information of the Engineer, the spacing and loading of the charge in each blast and compliance with this requirement will not relieve the Contractor of any responsibility in terms of the said Sub- Clause.

Scheduled rates for the relevant items of earthworks, excavations, demolitions, etc. shall cover all costs incurred in connection with supply, transportation, storage and handling explosives and the related blasting costs.

PSD 5.1.2.2 DETECTION, LOCATION AND EXPOSURE OF EXISTING SERVICES

a) The Contractor shall be responsible for establishing the position of all underground services. Where any underground services are shown on the drawings, the Contractor shall detect and locate such services and, if so ordered, he shall excavate by hand to expose the services in areas and in a manner and at a time agreed with the Engineer. The Council takes no responsibility for the accuracy of the information shown on the drawings in respect of underground services, nor for any omission.
b) Where necessary, the Contractor shall employ the use of specialist equipment to locate underground services. If instructed to do so by the Engineer, he shall be paid for it from the Provisional Sum allowed for in the schedule of quantities.

c) At least 14 (fourteen) days before commencing excavation to locate services under any Provincial / National Road / Municipal main road (road with metropolitan route number) / Transnet track / service of municipal department / other authority, the Contractor shall:

i. Arrange a site meeting with the authorities concerned and the Engineer to ascertain required precautionary measures.

ii. Give written notice to the department / authority concerned and the Engineer of his intention to excavate.

Payment for this work will be made per linear meter of cut according to the scheduled depth range.

PSD 5.1.2.3 PROTECTION OF AND ALTERATION TO EXISTING SERVICES
The Contractor shall advise the Engineer at least 2 days in advance of the actual date on which he proposes to excavate near any trunk service.

If practical, the Contractor shall first locate the service using specialist equipment. He shall not

excavate with mechanical equipment closer than 1m to the estimated position of any such service and shall, if ordered, expose the service by means of hand excavation of any such service and shall, if ordered, expose the service by means of hand carried out under proper supervision. The Contractor shall backfill excavations at services with approved material to the compaction density ordered.

PSD 5.1.2.4 NEGLIGENCE
Delete the existing clause and replace with:

When a service is damaged due to negligence on the part of the Contractor, he shall be liable for the cost of making good the damage and the Engineer shall deduct such cost from monies due to the Contractor.

PSD 5.1.4.3 EXCAVATED MATERIAL NOT TO ENDANGER OR INTERFERE

In addition to the existing clause, the following shall apply:

Where instructed by the Engineer or where the Works impose a danger to traffic, the Contractor shall remove excavated material off site to temporary stockpiles (approved by the Engineer) and return excavated material to site for use as backfill or bedding.

PSD 5.1.4.4 MAXIMUM LENGTH OF OPEN TRENCH

Unless otherwise permitted, not more than the following length of trench shall be opened in advance, in any one place, of the completed pipeline that has been backfilled:

Water and storm water pipelines:
Sewer pipelines: 75m
75m

PSD 5.1.6 ROAD TRAFFIC CONTROL

In the 4th line of Subclause 5.1.6 amend "South African road traffic signs manual1)" to read: "Southern African Development Community: Road Traffic Signs Manual1) and Chapter 13: [Roadworks Signing] of the South African Road Traffic Signs Manual1)“, and amend the footnote to read:

"1) Published by the Department of Transport, Pretoria."
Where traffic signals are required, they shall be provided and operated in accordance with the applicable requirements of the South African Road Traffic Signs Manual.

Where work is to be carried out while half of the roadway is closed to traffic, flagmen shall be provided and temporary road signs shall be erected, maintained and operated in accordance with

Drawing 4003 RDS 24.
* Drawing 4003 RDS 22: One-way traffic (signals).
The Contractor shall tender a lump sum in the Schedule of Quantities for accommodating traffic during the duration of the Contract, which sum shall cover all his obligations in this regard, including but not limited to temporary barricades; the erection and re-erection of existing and /or temporary traffic signs; lights and flagmen for the guarding and protection of the Works; and for making all necessary arrangements with the applicable traffic authorities. Payment shall be made monthly pro-rata to the overall progress of the Works.

PSD 5.2 METHODS AND PROCEDURES

In addition to clauses SANS 1200 D 5.2.1, D 5.2.2, D 5.2.3 and D 5.2.4, the work shall be carried out in accordance with the COP, Section 4.

PSD 5.2.2.1 EXCAVATION FOR GENERAL EARTHWORKS AND FOR STRUCTURES

Unless otherwise instructed, the provision for working space in sub clause (c) shall be as follows:

a) Where back shuttering of concrete is to be used: 600mm
b) For brickwork: 150mm
c) For precast concrete chambers: 150mm

PSD 5.2.2.3 DISPOSAL
All materials, excavated or other, surplus to that required for the Works, shall be loaded, transported, tipped and spread at approved sites.

PSD5-2.4.2 Topsoiling. (Subclause 5.2.4.2)

Topsoil shall be placed as directed in Subclause 5.2.4.2 on the faces of cut slopes and embankments and other flatter areas, as shown on the drawings or ordered by the Engineer, to a nominal thickness of 100 mm after light compaction.

PSD 5.2.4.7 FINAL FINISHING AND CLEARING UP
After completion of construction, including kerbing, storm water structures and bituminous surfacing, the site shall be cleaned of all loose stones, waste material, rubble and debris resulting from the operations of the Contractor.
Drainage structures, culvert inlets and outlets, culvert barrels and open drains shall be cleared of debris, soil, silt and other material. The slopes of cuttings and fills, sidewalks, verges, medians and islands shall be trimmed to neat uniform slopes and the entire site left in a neat and workmanlike condition. All temporary deviations shall be ripped and levelled off with the original ground surface in such a way that soil erosion is prevented. Any bituminous surfacing on deviations shall be removed and disposed of as directed by the Engineer. The Contractor shall take care not to damage existing works during finishing and clearing up operations. Any damage to roads, kerbing and channelling, drains, cut and fill slopes and services caused by Contractor's final finishing and clearing up operations shall be repaired by the Contractor at his own cost to the satisfaction of the Engineer.

PSD 5.2.5.1 FREEHAUL
No overhaul will be paid under separate rates for this contract as the rates tendered for the supply and/or removal of material shall be deemed to include provision for all haulage of material.

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSE 5:
PSD5-3 Recording of original ground profiles

Before commencing any earthworks, the Contractor shall assist the Engineer in establishing the original ground levels in the area for record purposes.

PSD5-4 Excavation of hard rock
The Contractor shall excavate hard rock by hand held rock breakers.

PSD 8 MEASUREMENT AND PAYMENT

PSD8.1.3Restricted excavation. (Subclause 8.1.3)
The provision of working space (see Subclause 8.3.5) will not be measured for payment. Notwithstanding the provisions of Subclause 8.1.3, the Contractor shall make his own allowance for the excavation of any working space required for formwork or other purposes. The rates for restricted excavation shall also cover the costs of providing working space. All restricted excavation will be measured to the net dimensions of concrete floor slabs or other dimensions ordered by the Engineer.

PSD8.3.3 Excavation using labour intensive methods
(ref. PSD3.1.1)

Except that extra-over payment will only be made for pickable excavation, the terms of subclause 8.3.3 shall mutatis mutandis apply.

PSD 8.3.8.1 EXISTING SERVICES: LOCATION
The unit of measurement for excavation by hand in soft material to expose underground services shall be the number of services exposed, and the tendered rate shall include for cutting and removal of premix or removing other surfacing
where necessary, excavating, shoring, protection of services, backfilling and compaction. Reinstatement of road and other services will be measured and paid for separately.

Where the Contractor is required to use specialist equipment to locate underground services, the use of such equipment shall be paid for on the basis of invoiced cost plus percentage profit tendered for the item to allow for handling costs and profit, from the Provisional Sum(s) included in the Schedule of Quantities for that purpose.

PSD8.3.10 Topsoiling. (Subclause 8.3.10)

Top soiling will be measured by surface area covered. The rate for top soiling shall cover the cost of loading, hauling, spreading to a thickness of 100 mm, compacting and making suitable provision to avoid the topsoil slipping down the slopes of embankments and cut-slopes, all to the approval of the Engineer.

PSD8.3.10 Reinstate kerbing, concrete slabs, etc. (Subclause 8.3.10)
The item will be measured in the unit scheduled. Payment will be additional to that for excavation covered by clauses 8.3.2 and 8.3.3.

The rate shall cover the cost of temporary accommodation of traffic (including the signs and bypasses), excavation (including the equipment that is required to break up, remove and, if necessary, stockpile the original surface material or item), and subsequently of reinstatement and shall include the cost of delays and the cost of any risk of having to repair damage.

SANS 1200 DB: EARTHWORKS (PIPE TRENCHES)

PSDB 3 MATERIALS
layers.

PSDB3-6 Properties of materials for reinstatement of existing road
(Subclause 3.6) The materials used in the reinstatement of existing road layers shall comply with the following physical properties:

a) Subbase: PI maximum 10.

CBR at least 45% at 95% of MAMDD.
b) Base: PI maximum 6.
CBR at least 80% at 98% of MAMDD.
c) Surfacing: Asphalt surfacing as specified in Subclause 3.6.4.
d) Gravel wearing PI maximum 14 but not less than 10.
course: The size of the aggregate shall not exceed 40 mm.
CBR at least 45% at 95% of MAMDD.

PSDB3-7 Selection. (Subclause 3.7)
(Ref PSDB8-2, PSDB8-6)
Notwithstanding Subclause 3.7, in terms of which the Contractor has a choice regarding methods of selection, the Contractor is required to use selective methods of excavation. The Contractor shall selectively remove and keep separate the sandy material from unsuitable material and place it adjacent to the trench for reuse as backfill, selected fill, selected granular material or for other use as ordered by the Engineer.

Material which, in terms of Subclause 6.2 of SANS 1200 D or Subclause 6.1 of SANS 1200 LB, is too wet for immediate use in the trench (but which is otherwise suitable) will not be regarded as "unsuitable" material and, if so ordered by the Engineer, the Contractor shall spread such material in a suitable area until it has dried sufficiently for later use. Should the material which is replaced in the trench become too wet again, due to the fact that the Contractor made insufficient provision for the handling and removal of groundwater in accordance with Subclause 5.5 of SANS 1200 A, the Contractor shall replace the material at his own cost with material which is, in the opinion of the Engineer, suitable.

When preparing his programme and construction methods, the Contractor shall make allowance for selective excavation and the handling and drying out of material which is too wet for immediate use.

PSDB 4 PLANT PSDB 4.1 EXCAVATION EQUIPMENT

The Contractor shall select trenching plant that ensures compliance with the trench widths specified in clause DB 5.2 or as scheduled. If trenches exceed the specified width the Contractor shall be liable for the cost of any thicker pipes or more expensive bedding which may be required as a result of the additional trench width.

PSDB 5 CONSTRUCTION
PSDB 5.1.3 ACCOMMODATION OF TRAFFIC AND ACCESS TO PROPERTIES

Delete the existing clause and replace with:

The Contractor shall comply with the requirements of the COP, Section 3.
PSDB 5.1.4 EXISTING SERVICES THAT INTERSECT OR ADJOIN TRENCHES
In addition to the existing clause, the following shall apply:

Where it is necessary for a sewer to pass under existing services, the Contractor shall carefully excavate and refill around them. During the course of the work, the services shall be adequately supported to the satisfaction of the Engineer. Any damage shall be reported without delay. Depending on the nature of the service damaged, the Engineer will rule whether the damage shall be made good by the Contractor or whether the owner of the service will be called upon to repair it on the Contractors behalf. In any event, the cost of the repair work shall be for the Contractor's account.

PSDB 5.2 MINIMUM BASE WIDTHS SPECIFIED
The specified trench width shall be strictly adhered to. Should the excavated trench width exceed the specified width adjacent to and for 300mm above the barrel of the pipe, remedial measures shall be

directed and shall be provided at the Contractor's cost, unless it can be shown that such excess width is due to factors beyond the Contractor's control.

PSDB 5.4 EXCAVATION

Pipe trenches shall be excavated in lengths not exceeding 100m for sewer pipelines, unless otherwise approved by the Engineer. Work shall be carried out in accordance to SANS 1200 D Clause 5.1.4. In the open veld the Contractor shall limit the length of trenches open, at any time, to a maximum of 1 250 m or between fence crossings, whichever is the smaller. Within the residential areas the length of trench open at any one time shall not exceed 100 m per pipe-laying team.

If the lack of space near existing houses, structures, fences or services restrict the use of normal vehicles, or where trench excavations in hard rock material cannot be done by means of blasting, the excavation shall be carried out by other methods. Where steep slopes (steeper than 1:4), the lack of unobstructed space or the proximity of existing services prohibits the use of a 55 kW back-acting excavator for trench excavation, the Engineer may order or permit the use of hand excavation (Ref PSDB8-5).

PSDB 5.5 TRENCH BOTTOM

Unless if they are in undisturbed, neatly trimmed, fine in-situ material, trench bottoms shall be compacted to 90% modified AASHTO density by means of power-driven plant.

The Contractor shall maintain the floors of completed trenches in good condition. Floors softened or eroded through stormwater, seepage water or otherwise, shall be rectified by removal of the softened material and its replacement with approved material firmly compacted in layers not exceeding 0,1m in compacted thickness or with 10 MPa concrete where directed, at the Contractor's cost.

Accurately located recesses shall be cut into the bedding cradle or trench bottom to accommodate pipe joints and such recesses shall be properly shaped and sized to enable jointing to be carried out without difficulty. Recesses for joints shall have a clear space of not less than 75mm below the pipes. The placing of hardcore or concrete screed shall be entirely at the Contractor's cost in any section of the work where softening of floors has been due to the method of excavation or inadequate provision for drainage.

Bad or waterlogged ground in trenches shall be excavated and replaced withhardcore filling, a hardcore base and/or a 20 MPa concrete screed as directed.

a) Hardcore filling shall consist of 75 – 150mm stone well rammed and compacted in areas where soft or saturated sections of the trench bottom had to be removed, to form a stable working platform for the pipe bedding. (Rock filling).

b) Hardcore base shall consist of 50 – 75mm stone laid and compacted across the full width of the trench as part of the pipe bedding where required, especially in waterlogged trench bottoms. The cost of the preparation of trench bottoms shall be included in the scheduled rates for excavation. Approved granular material imported to the site, or hardcore base, hardcore filling or concrete screed, used on trench floors will be paid for separately.

PSDB 5.6.1 GENERAL

Trenches affecting traffic shall be backfilled level with adjacent surfaces immediately after completion of pipe laying and successful testing. Should the pipe laying not be completed before work is due to cease for the day, the Engineer shall be entitled to instruct the Contractor to backfill the trench and re-excavate it the following day in order to complete pipe laying. The cost of the above activity shall be included in the Contractor's rates for excavation.

Buttresses left in soft ground to support the sides of trenches of headings for access to properties shall be broken down during the backfilling and compaction.

Simultaneously with the backfilling of a branch pipeline trench, backfilled material in the main pipeline trench shall be stepped or raked back and compacted in layers not exceeding 0,30m compacted thickness.

PSDB 5.6.3 &
PSDB 5.6.4 DISPOSAL OF SURPLUS OR UNSUITABLE EXCAVATED MATERIAL
Excavated material from the trench that is unsuitable or has become surplus because of bulking, displacement by the pipe and importation shall be disposed. The Contractor's attention is drawn to SANS 1200 D 5.2.2.3 and PSD 5.2.2.3 in this regard. The prior approval of the Engineer must be obtained before surplus material may be deposited, spread and levelled at agreed sites within the area of the works.

PSDB 5.7.2 AREAS SUBJECTED TO TRAFFIC LOADS
The requirements of Clause 5.7.2 shall apply only to pipes and sleeves crossing streets or paved areas and pipes running parallel to the road as described below. Only streets or roads required to be constructed to line and level will be classified as such in terms of this clause. All service trenches running parallel to the road of which the roadside edge of the trench is located less than 1.4m away from the edge of the travelled way, will be subject to the requirements for the above-mentioned clause.

The measurement and payment will apply to the full trench width. Pipes and sleeves crossing streets or paved areas will be measured and paid for to a length equal to the width of road or length of pavement crossed plus 1.4m either side of the travelled edges. Compaction of other pipe trenches running parallel to the roadway shall be considered areas subject to traffic loads only where instructed by the Engineer in writing. The volume will be computed from the minimum base determined in accordance with Sub-Clause 5.2 and the depth from the top of the backfill to the top of the bedding as specified in Sub-Clause 8.3.3.1.

PSDB 5.8 CONSTRUCTION IN HEADINGS
Generally, in soft material the buttresses and portions of ground left for the purpose of supporting the sides of the trenches or headings providing access to private properties, shall be broken down as the backfilling and compaction proceeds.
Where excavation for sewer connections are backfilled, after the main backfilling, the materials in the latter shall be stepped or raked back and compacted in 300mm layers, simultaneously with the refilling of the sewer connection excavation.

PSDB 5.9.2 REINSTATEMENT – PRIVATE PROPERTY AND COMMONAGE
Restoration of servitudes, parks, unpaved roadways and sidewalks, etc., shall be with the same type of surfacing and to at least the same standard and conditions as existed before excavation took place.
Grass sods shall be neatly cut from grassed areas to be excavated and shall be preserved and kept damp until they can be replaced during the reinstatement. All other material to be used for reinstatement shall be suitably stored for such purpose.
The schedule rates for excavation shall include for the reinstatement of unpaved areas.
Any settlement below original ground level that occurs during the execution of the Contract or the Defects Liability Period shall be made good by the Contractor within a reasonable period as determined by the Engineer.

PSDB 5.9.4 REINSTATEMENT OF SURFACES
The Contractor shall ensure that the backfilling and reinstatement of any trench or other excavation is completed within 2 weeks of the sewer concerned having been laid or the other work having been approved. This principle shall apply to either temporary or permanent reinstatement as appropriate. Should the Contractor fail to comply with this requirement, the Engineer may, at his discretion, arrange for such reinstatements to be carried out by some other agency and the cost of this work shall be deducted from monies due to the Contractor. The Contractor shall not be relieved of any

responsibility for defects or claims arising from the conditions of any trench reinstated by an outside agency on the instructions of the Engineer. Pipe trenches through the existing bitumen surfaced roads shall be reinstated with a 150mm upper selected subgrade layer compacted to 93% Mod AASHTO density, followed by a 150mm subbase layer compacted to 95% Mod AASHTO density and a 150mm graded crushed stone base compacted to 98% of Mod AASHTO density. The road shall be provided with a 25mm thick asphalt seal. The upper selected subgrade layer shall have a CBR of at least 15, a grading modulus of at least 0.75 and a maximum PI of 12. The subbase shall conform to SANS 1200ME and the base to SANS 1200MF.

PSDB 7 TESTING

PSDB 7.1 DENSITY TESTS

The Engineer may carry out quality control testing of compaction densities. Testing by the Engineer will, however, not relieve the Contractor of his responsibility to ensure adequate compaction throughout and the Contractor should therefore carry out his own regular compaction tests. If a hydrodensimeter is used, the Contractor shall furnish the Engineer with a certificate of calibration of the instrument together with copies of all test results. A minimum of 4 random compaction tests is required per day of compaction production. Testing shall be to the full layer depth of material placed, or in stages not exceeding 300mm equivalent layer depths, whichever is the lesser.
If any test results show that the specified compaction requirements have not been met, the Contractor shall at his own expense and within 7 days of receipt of the Engineer's instruction, take the following action:

PSDB 7.1.1 BACKFILL MATERIAL

a) Trench excavations (other than road crossings)

The backfill material shall be ripped up to the depth of the failed layer for a distance of 2m on either side of the point at which the test was taken. If the previous layers had not been tested, the untested layers shall also be ripped up to depth of 450mm. If the backfill material is suitable, it shall be re-compacted in layers to the specified densities. Otherwise, suitable material shall be imported and compacted in layers and the excess material removed. Where adjacent tests results show that the backfill densities are below specified requirements, the entire length of trench between the points at which the tests were taken plus 2m outside each end of that length shall be re-excavated and re-compacted as required above.

Density testing along trench excavations shall be carried out at intervals, as directed by the Engineer.

b) Trench excavation (road crossings)

As for (a) above save that the failed layer or all untested layers up to a total thickness of 450mm shall be removed over the full width of the road and reinstated.

c) All other excavations

As for (a) above save that the backfill material shall be removed over the extent of the excavation.

PSDB 7.1.2 PREMIX

The compacted density of premix in roadways shall be a minimum of 93% Marshall Density.

a) Trench excavations (other than road crossings):

The premix shall be removed for a distance of 1 m on either side of the point at which the tests was taken and reinstated in accordance with Section 5 of the COP.

b) Trench excavation (road crossings):

As for (I) above save that the premix shall be removed over the full width of the road.

c) All other excavations:
As for (a) above save that the premix shall be removed over the full extent of the excavation. The Council will not be liable for additional costs or delays arising from remedial work required to excavations which have already been finally reinstated before the Council's test results become available.
Add the following new clause:

PSDB 7.2 INSPECTION AT INTERMEDIATE STAGES OF CONSTRUCTION
The Contractor shall call for an inspection of the works at the following intermediate stages of construction.

a) After completion of the trench excavation and preparation of the trench bottom; and before any pipe is laid, or placed in the trench preparatory to laying.

b) After the selected backfill, material has been placed around the pipe; and before the remainder of the trench is backfilled.

c) After the top layer of backfill, material has been excavated preparatory to final reinstatement with premix, before the premix is placed.

Work shall not progress through the specified stages without the approval of the Engineer or his representative on Site. Failure to comply with the provision of this clause may result in the suspension of work for a period as determined by the Engineer.

PSDB 8 MEASUREMENT AND PAYMENT

PSDB 8.1 BASIC PRINCIPLES

PSDB 8.1.1 For disposal of surplus material refer to clause SANS 1200 DB 5.6.3. Lengths shall be completed and backfilled before payment will be made.

PSDB 8.1.2 (b) The depth ranges to be measured for payment shall be as scheduled.

PSDB 8.1.2 (c) Amend the last sentence to read:

"The ground surface will be that existing after any bulk excavation has been carried out and before any embankment has been constructed, unless a portion of the embankment has to be constructed in order to achieve an acceptable cover over a pipe that is to be installed, in which case, measurement will be made from the level of embankment that produces an acceptable minimum cover over the pipe."

PSDB 8.1.4 No overhaul shall be measured for payment. Refer to clause PSD 5.2.5.1

PSDB 8.2.3 COMPUTATION OF QUANTITIES

The indicated/scheduled/specified widths shall be the maximum widths to be measured for payment.

PSDB8.3.2 Excavation. (Subclause 8.3.2)

The rates for excavation of trenches shall cover all costs of:

i) the work listed in Subclause 8.3.2(a) of SANS 1200 DB, irrespective of the method of excavation used irrespective of depth,

ii) barricading and lighting,

iii) safeguarding and accommodation of traffic and maintenance of accesses, as specified in

PSA5-2,

iv) restrictions on the methods of excavation, also on account of restricted working space adjacent to houses, fences and other structures,

v) selection as specified in PSDB3-7,

vi) density testing in accordance with PSDB7-1.

The rates for trenches that do lie within road reserves shall, in addition to the above, cover the cost of all work listed in Subclause 8.3.3.3 of SANS 1200 DB.

Excavation in hard rock will be measured for payment "extra-over" the rates for soft excavation.

PSDB 8.3.2(b) EXTRA OVER FOR INTERMEDIATE MATERIAL AND ROCK
The extra-over rates for excavating in intermediate material and in rock shall cover the additional cost of excavating and handling materials classified as such and shall include the cost of importing suitable backfill materials and the disposal of unsuitable material to the Contractor's tipping site and the replacement of same with suitable material.

PSDB 8.3.2(b) EXTRA OVER FOR

Include an additional item Extra over for:
Soft excavation Class A Unit: m^3

PSDB 8.3.5 DEALING WITH SERVICES THAT INTERSECT OR ADJOIN A TRENCH

The tendered rates for items scheduled in terms of clause SANS 1200 DB 8.3.2 (excavation) as amended, shall include for the additional cost of:

a) Care in excavation necessitated by the presence of such service or group of similar services in or across the trench.

b) Protecting and maintaining such service in operation by means of temporary supports of shoring, as necessary.

PSDB 8.3.6 FINISHING
The width of any trench through an area paved with bricks or precast concrete units shall be the minimum practicable width which, in the opinion of the Engineer, can be removed without cutting bricks or precast units.
The Contractor's rate for supply and lay of premix must provide for all plant, labour and material costs associated with the work, including inter alia:

a) The cost of the premix, the collection, transport to site and placing in accordance with the relevant clauses of the project specification.

b) All wastage and over break reinstatement costs, including the purchase of the premix.

PSDB8.3.6 Reinstate kerbing, concrete slabs, ETC. (Subclause 8.3.6)

The item will be measured in the unit scheduled. Where applicable, measurement will be based on the trench width determined in accordance with Clause 5.2. Payment will be additional to that for excavation covered by Clause 8.3.2.

The rate shall cover the cost of temporary accommodation of traffic (including the signs and bypasses), excavation (including the equipment that is required to break up, remove and, if necessary, stockpile the original surface material or item), and subsequently of reinstatement and shall include the costs of delays and the cost of any risk of having to repair damage, as specified in 5.10.

PSDB8-3.6.1 Reinstate road surfaces. (Subclause 8.3.6.1)

In addition to the items covered by Subclause 8.3.6.1 the rates for the reinstatement of road surfaces shall also cover the cost of density testing as specified in PSDB7-1.

PSDB 8.3.7 ACCOMMODATION TO TRAFFIC

The scheduled rate for the accommodation of traffic shall cover the cost of establishing on Site the barricading, lighting, road signs and any other equipment necessary to comply with clauses PSD 5.1.1.1 and PSD 5.1.1.2 and SANS 1200 clause DB 5.1 of the specifications: together with the cost of operating and maintaining the equipment in accordance with the requirements of these clauses.

The cost of providing temporary bridges to allow for vehicular or pedestrian traffic across the trenches as specified shall be included in the tendered rates for trench excavation.

PSDB 8.3.8 CUTTING PREMIX SURFACES
The rate for cutting premix surfaces shall cover the cost of cutting premix for the depth ranges scheduled with a diamond tipped saw or by some other approved method. The depth of the cut shall be such that the adjoining premix surfaces are not disturbed when excavation takes place. Cutting of premix surfaces shall be measured per linear metre of cut, not per linear metre of trench.

PSDB8-4 Crushed stone bedding layer

(ref. PSDB5-5)
Where the use of a layer of crushed stone in the trench bottom has been authorized by the Engineer, it will be measured by volume calculated according to the length multiplied by the specified thickness and specified minimum base width.

The rate shall cover the cost of all additional excavation and preparation of the trench bottom to

accommodate the layer of stone, the removal of unsuitable material, the supply and placing of a layer of stone at least the specified thickness over at least the specified width and all related activities in order to produce a stable platform.

PSDB8-5 Hand excavation

Where hand excavation is ordered or approved in terms of PSDB5-6, the work will be measured by length of trench or by volume of material excavated by hand and will be paid extra-over the rate for normal trench excavation.

The rate shall cover all additional costs of excavating by hand.

Hand excavation for the location of services will be measured elsewhere.

PSDB8-6 Temporary stockpiling of wet material from trench excavations

The excavation and stockpiling of material which is too wet, will be measured by the volume, based on the specified trench width, depth and length, which the Engineer orders to be removed in terms of PSDB3-7

The rate shall cover the cost of all operations required to handle, transport to a suitable site and spread to allow the material to dry sufficiently, as well as any costs for disruptions, delays and associated overhead costs resulting from drying out the material.

SANS 1200 DM: EARTHWORKS (ROADS, SUBGRADE)

PSDM2 Interpretations

PSDM2-1 Supporting specifications. (Subclause 2.1)
Delete from Subclause 2.1(c) "or SANS 1200 DA, as applicable" and throughout the specification delete all reference to SANS 1200 DA. Clear and Grub and scarify up to a depth of 150mm to spoil. (SANS1200C)
Rip and recompact to a depth of 150mm to a density of 93% MOD AASHTO, G7 material or better. Where material is not G7 or better, contractor is to import such material and box out 150mm layer to construct a new 150mm base.
Import 150mm layer G5 material or better and compact to 95% Mod AASHTO as the wearing course (SANS 1200ME-3.2.1 AND 3.2.2). Substitute with 60mm paving blocks where specified. (SANS1200MJ).

The contractor is deemed to have included in his rates under section 1200DA and 1200ME the rates for the required equipment to achieve the specified compaction effort and clearing and grubbing as required.

PSDM5 Construction

SDM5.2.2.4 TEMPORARY STOCKPILING OF MATERIAL

Add the following to this sub-clause:

All the material excavated from the roads or trenches, that are being constructed, which is considered to be suitable for use in roads or trenches, should be stockpiled on site at a position approved by the Engineer. The selected site shall be prepared by clearing and light grading.

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSES 5:
PSDM5.3 Verges
(ref. PSDM8-6)
The construction and trimming of verges to the widths and grades shown on the drawings, or as directed, shall form portion of the work required to be carried out under this Specification SANS 1200 DM, also where such construction extends beyond the road reserve.

PSDM5.4 Selected fill to sidewalks above subgrade level
(ref. PSDM8-5)
Material used for filling behind kerbs above subgrade level and below sidewalk base or gravel surfacing shall be of selected subgrade quality. This material shall be compacted to at least 93% of MAMDD (100% in the case of sand). The Contractor may however, at his own additional expense, construct all or portion of this fill using subbase material rather than selected subgrade material.

PSDM5.5 Drying of selected layer material that is too wet

Selected layer material that is, according to Subclause 6.2 of SANS 1200 D, too wet for immediate use in the selected layer (but which is otherwise suitable) will not be regarded to be "unsuitable", and if so ordered by the Engineer, the Contractor shall remove the wet material from the road prism, move it to a suitable area, and spread it out to dry. After it has dried out sufficiently it shall be replaced in the road prism and compacted.

If the replaced material in the road prism should again become too wet because the Contractor has not made adequate provision for the handling and removal of groundwater, in accordance with Subclause 5.5 of SANS 1200 A, the material shall be replaced at the Contractor's own cost, with material that, in the opinion of the Engineer, is suitable.

PSDM7 TESTING

PSDM7.2 TESTING – PROCESS CONTROL
One field density test shall be carried out for each 300 square metres of each layer of construction subject to a minimum of three tests on any one layer compacted in one day.
PSDM7.3.2 Routine inspection testing. (Subclause
7.3.2)

Notwithstanding Subclause 7.3.2 and Table 2, no single test result which is below the specified density will be accepted.

PSDM8 MEASUREMENT AND PAYMENT

PSDM8.3.3 Testing PSDM8.3.4 PSDM8.3.5

The rates for treatment of roadbed, cut and borrow to fill and selected layer in Subclauses 8.3.3, 8.3.4 and 8.3.5, respectively, shall also cover the cost of testing as specified in Clause 7.

PSDM8.3.7 Temporary stockpiling of subgrade material that is too wet PSDM8.3.11
Temporary stockpiling of subgrade material that is too wet will be measured by volume calculated from the specified width, thickness and length removed, dried out and replaced as ordered by the Engineer.

The rate shall cover the cost of all work in connection with the excavation, loading, transport, off-loading, spreading to dry it out sufficiently, reloading, off-loading and placing within the road prism, and all costs of delays, disruption and overheads resulting from having to dry out the material.

PSDM8.4 Importation of material

The rate for selected subgrade material imported from commercial sources shall cover the cost of supply, transport, placing and compaction of the selected subgrade layer as specified. The importation of material from commercial sources will be measured for payment only if such importation has been ordered in writing by the Engineer.

PSDM8.5 Selected fill to sidewalks above subgrade level
(ref. PSDM5-4)
The selected fill to sidewalks above subgrade level will be measured by volume of material in place after compaction by the method of average end areas.

The rate shall cover the cost of the supply of all material as though it were selected subgrade material, loading, transporting, off-loading, spreading, placing, compacting, the supply of all labour, supervision, tools and equipment and for any other operation or thing necessary for the proper execution of the work.

PSDM8.6 Verges

The cost of trimming verges, as specified in PSDM5-1, shall be included in the rates tendered for the construction of the subgrade, and no additional payment will be made for such work. Separate payment for trimming will be made in the following cases (the schedule rates for all other cases shall include the costs of trimming excavations and fillings)

1) Where the material at or below subgrade level does not require compaction.
The surface of the excavation at subgrade level shall be finished and trimmed to within the tolerances specified elsewhere for earthworks.

2) Where the excavation at subgrade level is in hard rock material.
The surface shall either be trimmed to subgrade level, all loose fragments being removed, or excavated to below subgrade level, all loose fragments being removed and then filled to subgrade level with

the same material and to the same density of compaction as specified for the succeeding layer. Whichever method is employed, payment will be made for trimming of the subgrade in hard rock material under the appropriate item and for the supply and compaction of all the extra levelling materials necessary, regardless of the thickness of the levelling course.

PSG CONCRETE (STRUCTURAL) (SANS 1200 G)

PSG2 Interpretations

PSG2.3 Definitions. (Subclause 2.3)

"Constructional joint: a joint required on account of constraints or convenience in the method of construction and that is not a movement, contraction or expansion joint."

PSG2.4.1 Exposure condition. (Subclause 2.4.1)

All concrete on the Works shall be as specified for severe exposure condition.

PSG2.4.2 Strength concrete. (Subclause 2.4.2)
(See PSG5-3)

Grade 30 MPa/19 mm means strength concrete grade 30 MPa with 19 mm stone.

PSG2.4.3 Joints
(ref. PSG8-2, PSG8-3)
Notwithstanding Subclause 2.4.3, "designated joints" will only be joints that are shown on the drawings. Any other joints that are required by the Contractor as a result of his construction constraints or for any other reason, whether approved by the Engineer or not, will not be considered to be designated joints as defined in Subclause 2.4.3, i.e. they will be considered to be "non-designated" joints.

PSG3 Materials

PSG3.2 Cement. (Subclause 3.2)

All cement used in the works shall be Portland cement CEM I complying with SANS 50197-1.

PSG3.2.3 Storage. (Subclause 3.2.3)
Cement shall be used in the order in which it is received. Unless approved by the Engineer, cement kept in storage for longer than 8 weeks shall not be used in the Works. Any cement that contains lumps that cannot easily be crumbled to powder between the fingers, may not be used.

PSG3-3 Water. (Subclause 3.3)
Only potable quality water from an approved source may be used for mixing concrete. Water from a river or stream may however be used for curing.

PSG3-4 Aggregates. (Subclause 3.4)
The nominal stone size specified in the concrete grade (e.g., 25 MPa/19 mm) shall mean stone conforming to the grading specified in SANS 1083 for the nearest equivalent size.

Dolomitic aggregate
All coarse and fine aggregate used in precast or in situ concrete, mortar or plaster for the construction of the sewage pumpstation, sewer manholes, benching in the jacked pipes, and other structures which will be subjected to sewage gases, shall be dolomitic.

When tested in accordance with the method specified in Appendix C of SANS 677, not more than 25% by mass of the dolomitic aggregate shall be insoluble in hydrochloric acid.

PSG3.2 & 3.4 Concrete using reactive aggregates. (Subclauses 3.2 and3.4)
(Ref PSG8-2)
The Contractor shall provide the Engineer with sufficient data to enable him to assess the degree of alkali-aggregate reactivity of the aggregates to be used for concrete .In the case of other aggregates that are less reactive the Engineer will determine the type and degree of precautionary measures to be adopted. Unless otherwise directed by the Engineer, low-alkali Portland cement complying with the requirements of Subclause 3.1.2 of SANS 50197-1 shall be used for all prescribed concrete of Grade 15 or stronger and for all strength concrete.

PSG3.4.2 Use of plums. (Subclause 3.4.2)

The use of plums will not be permitted.
PSG3.5.1 Admixtures. (Subclause 3.5.1)
The use of admixtures will be subject to the approval of the Engineer. The information listed in Subclause 3.5.1 shall be provided.

PSG5 Construction

PSG5.2 Formwork
PSG5.2.1 Classification of finishes. (Subclause 5.2.1)

ormwork for formed concrete surfaces against which backfill will be placed shall be rough. Formwork for all other formed surfaces shall be smooth, except where otherwise specified.

PSG5.5 Concrete
PSG5.5.1.1 General. (Subclause 5.5.1.1)
(ref. PSG8-2)
The concrete mix design for strength concrete must be prepared in an approved laboratory and the results of actual test mixes must be submitted for approval together with 7-day and 28-day strength test results. Special attention is drawn to the fact that the concrete mix must provide a very dense and impervious concrete. No concrete shall be cast until the mix designs have been approved by the Engineer. The Engineer may call for revised mix designs at any stage during the Contract. In order to facilitate increasing the workability of concrete in the fresh/plastic state, to ensure watertightness without increasing the water/cement ratio, the Engineer may approve the use of an additive. The workability of concrete shall be assessed by means of the slump test. The slump shall be between 30 and 40 mm.

PSG5.5.1.4 Chloride content. (Subclause 5.5.1.4)
With reference to Table 4, efflorescence will not be acceptable on any exposed concrete surface.

PSG5.5.1.5 Durability. (Subclause 5.5.1.5)
The water/cement ratio shall be as specified in Table 5.

PSG5.5.1.6 Prescribed mix concrete. (Subclause 5.5.1.6)

Notwithstanding the requirements of Subclause 5.5.1.6, samples of aggregates will not be made available by the Engineer. The Contractor shall supply aggregates from commercial sources located by him, complying with the requirements of Subclause 3.4.1, for the production of prescribed mix concrete.

Unless otherwise directed by the Engineer in writing, prescribed mix concrete shall be mixed in the following proportions:

Grade	By mass		By volume			
	Cement		Sand	Stone	Cement	Sand+ Stone
30	1	2,2	2,9	1 bag$	0,08 m³	0,09 m³
25	1	2,5	3,2	1 bag$	0,09 m3	0,11 m3
20	1	2,9	3,6	1 bag	0,11 m3	0,13 m3
15	1	3,6	4,2	1 bag	0,14 m3	0,15 m3
10	1	4,5	5,0	1 bag	0,17 m3	0,17 m3

+ Assuming 5% moisture in sand
$ = 50 kg

PSG5.5.3.2 Ready-mixed concrete. (Subclauses 5.5.3.2 and 7.3)

Concrete from a central concrete production facility other than on the construction site will be permitted and, apart from test results in terms of 7.3.1, 7.3.2 and/or 7.3.3, test results obtained by such a production facility as part of its quality control system will be accepted for evaluation in terms of Subclause 7.3.4, provided they are stored and cured on site.

PSG5.5.5 Casting of concrete in excavation. (Subclause 5.5.5)
Structural concrete shall not be cast directly against the side of any excavation without the use of formwork unless prior approval has been obtained in writing from the Engineer. Concrete used in pipe trenches for encasement may be cast directly against the side of the excavation. Concrete for thrust/anchor blocks shall be cast directly against the side of the excavation.

PSG5.5.9.2 Hot weather conditions. (Subclause 5.5.9.2)

No placing of concrete shall take place if the ambient temperature exceeds 32oC or is likely to rise to above 32oC during the casting period or within eight hours after casting is completed. If concrete is to be cast during times of high ambient temperature or hot drying winds, the Contractor shall be responsible for taking the necessary steps to keep the placement temperature as low as possible. Such steps include the spraying of the coarse aggregate with water, the painting of silos with a reflecting aluminium paint, the insulation of tanks and pipelines, and the protection of concrete ingredients against the direct rays of the sun. The area of the pour shall be shaded before and during concreting and the concrete shall be shaded from the time of mixing until eight hours after placing.

Windbreaks shall be erected if necessary.

PSG5.5.14 Defects. (Subclause 5.5.14)
All defects shall be repaired as soon as possible after the formwork has been removed and the

Engineer has inspected the concrete. A statement of the method to be used for each repair shall be submitted to the Engineer for his approval before any work is carried out. The Engineer may prohibit the further placing of concrete in the particular area concerned until he is satisfied that the repair has been satisfactorily executed.

ADD THE FOLLOWING SUB-CLAUSES TO CLAUSE 5.5:

PSG5.5.16 Casting pipes and specials in concrete
Where the pipe or special is supplied by others the Contractor shall provide a box-out in the wall and cast the unit in at a later stage. When constructing such box-outs reinforcement shall not be cut but shall run through the opening. Reinforcement shall be cut and/or bent out at a later stage to suit the item being cast in. After installation of the item the remaining reinforcement shall be bent back in position. Where entry holes for pipes/specials have been provided in the walls, the Contractor shall be responsible for the concreting 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 shall:

a) remove all formwork and boxing remaining in the holes;

c) make any alterations required to the position and shape of the holes and cut reinforcement to suit the item, as directed by the Engineer; and

d) thoroughly scrabble the sides of the holes so as to obtain a satisfactory bond surface for the new concrete and treat the surface as specified in
Subclause 5.5.7.3.

Immediately prior to concreting 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 made of the same mix as the concrete in which the pipes/specials are to be placed.

The concrete ingredients shall be mixed and placed as dry as possible to obtain a dense, waterproof concrete. The concrete shall be carefully worked around the puddle flange, if any, and the pipe barrel or body of the special, and shall be vibrated in layers so as to obviate a falling away from pipe/special surfaces of the concrete already placed. The whole shall, when set, form a dense, homogeneous, and waterproof mass.

PSG6 Tolerances

PSG6.1.1 Permissible deviations (Subclause 6.1.1)

The permissible deviations shall be within the limits set out for Degree of Accuracy II in Subclause 6.4.

PSG7 Testing

PSG7.1.2Frequency of sampling. (Subclause 7.1.2)

One sample shall consist of three concrete test cubes.

For each sample taken the position in the structure shall be recorded where the batch represented by that sample is placed.

PSG8 Measurement and payment

PSG8.1.2.2 Reinforcement. (Subclauses 8.1.2.2 and 8.1.2.3)

Notwithstanding the method of measuring and paying for reinforcement specified in Subclauses 8.1.2.2 and 8.1.2.3, reinforcement will be measured and paid for as scheduled.

PSG8.1.3.3 Concrete. (Subclause 8.1.3.3)

The rates for concrete shall also cover:

b) the use of dolomitic aggregate where prescribed,
c) the cost of meeting the requirements of PSG3-5,
d) the cost of the preparation of design mixes by an approved laboratory and submission for approval by the Engineer (see PSG5-2.1),
e) the cost of non-designated joints (see PSG2-4),

PSG8.5 Joints. (Subclause 8.5)

Only designated joints as shown on the drawings will be measured for payment according to the length of each type of joint constructed (see PSG2-4). The rate shall cover the cost of all materials, labour and plant required to construct each type of joint specified on the drawings, including the cost of all shuttering, treatment of the joint as specified in Subclause 5.5.7.3, the provision of chamfers as specified where concrete is exposed, as well as testing and repairing where necessary.

Non-designated joints will not be measured for payment.

PSM ROADS (GENERAL) (SANS 1200 M)

PSM2 Interpretations

PSM2-1 Classification of road construction materials

The road construction material codes that are used in this Project Specification and drawings refer to "TRH 14: 1985 - Guidelines for road construction materials".

PSM3 Materials

PSM3-1 Specified properties of "G" quality materials

In addition to the requirements of SANS 1200 DM, ME and MF (MFL), materials ordered by "G" codes shall comply with the following specifications; where any conflict arises, the requirements given below shall apply:

Code CBR
% at specified density, not PI
not more than Max. Dimension of stone (mm) GM
(min.)
less than
G3
G4
G5
G6
G7
G9 -
80
45
25
15
7 6
6
10, or 12 where;
P2,0 < 30
12
12 or (3 x GM + 10)
whichever is greater
N/A 37,5
37,5
63
2/3 of layer thickness
50
1,5
1,2
0,75
Ps = Percentage passing, where s = the sieve with opening size "s" mm
GM = Grading Modulus = 300 - (P2,0 + P0,425 + P0,075)
100

PSM7 Testing

PSM7-1 Compaction control. (Subclause 7.4)
"Except that where a nucleonic device is used it shall have been satisfactorily calibrated against the sand replacement method for each type of material on which it is used."

PSM8 Measurement and payment
PSM8-1 Testing
The Contractor shall bear the cost of all tests carried out by the Engineer at the request of the Contractor or as specified for process control.

PSMK KERBING AND CHANNELLING (SANS 1200 MK)
PSMK3 Materials
PSMK3-1 Bedding material. (Subclause 3.9)
Amend the 2nd and 3rd lines of Subclause 3.9 to read:

"a 1:3,6:4,2 concrete mix of cement, sand and 19 mm aggregate."
PSMK5 Construction
PSMK5-1 Precast concrete kerbing and channelling. (Subclause 5.2)
In the second line of Subclause 5.2 after "50 mm" insert the word: "(minimum)".
After the first sentence in Subclause 5.2: insert: "The bedding shall be placed to the thickness and dimensions as shown on the drawings."
PSMK5-2 Transition kerbs
The Contractor shall construct transition kerbs to the details shown on the drawings.
PSMK8 Measurement and payment

PSMK8-1 Concrete kerbing

The rate for precast kerbing shall include for the concrete bedding and backing shown on the drawings.

PSMK8-2 Transition kerbs

Transition kerbs, that are used between different types of kerbs and channel or on either side of catch pits, will be measured by the number of each type, extra over the respective types of kerbing and channelling.

The rate shall cover the additional cost of constructing the transition length in in-situ concrete and with kerbing and channelling units as necessary.

C3.2.2.1 TECHNICAL SPECIFICATIONS FOR STRUCTURAL WORKS SECTION B – BUILDING WORKS

B CONSTRUCTION

B1 GENERAL
This part of the specification covers the minimum requirements regarding construction for Structural Works pertaining to buildings and shall be read in conjunction in conjunction with all relevant architect's, engineer's and other specialist drawings, details and specifications.

THE LATEST EDITION OF ANY STANDARD SPECIFICATION SHALL APPLY

B3 DAMPPROOFING AND WATERPROOFING

B3.1 Floor Slabs
B3.1.1 Floor slabs not subjected to subsoil groundwater pressure shall be laid on a 250-micron PVC membrane with sealed laps and joints over compacted subgrade treated with ant poison and weed killer.

B3.1.2 Floor slabs subjected to subsoil groundwater (basement floors) shall be laid on a 500-micron PVC membrane with sealed laps and joints over a 85 mm thick compacted layer of

12 mm clean crushed aggregate or no-fines concrete (whichever is specified on the drawings) over compacted sub grade. The drainage layer must be connected to a drainage system to relieve groundwater pressure.

B3.2 Walls

B3.2.1 Walls which are not reinforced cavity or pocket walls or retaining walls shall be laid over a bituminous or polyolefin dpc membrane positioned to fully cover the wall thickness and protruding 10 mm from the external face of the wall. The dpc shall be laid horizontal in single leaf walls and stepped in cavity walls or as detailed on the drawings.

The external face of walls shall be rendered waterproof by application of plaster using 'Cemcrete' Waterproof Cement.

B3.2.2 Basement walls subjected to subsoil groundwater shall be waterproofed and provided with subsoil drains to relieve groundwater as detailed on the drawings. The subsoil perimeter drains to be connected to under floor drains (where drains are detailed) shall comprise of

100 mm nominal diameter perforated pitch fibre pipes embedded in a 300 x 300 filter medium of 38 mm crushed aggregate wrapped in a geofabric membrane.

Vertical fin-drains shall be installed against the plastered soil face of basement walls terminating into the horizontal perimeter drain which shall discharge into the stormwater reticulation system. The buried portion of basement wall shall be treated with a fully torched-on bituminous waterproofing membrane (or alternative approved) and protected from puncturing during backfilling by sheets of hardboard.

B3.2.3 Retaining walls and other walls subjected to subsoil groundwater but which do not require to be waterproof shall have weepholes at maximum 1 000 mm centres comprising of 50 mm PVC sleeves or 40 mm wide gaps between the perpends of masonry walls unless otherwise detailed on the drawings. The rear end of the weepholes shall terminate into a horizontal subsoil drain comprising of 100 mm nominal diameter perforated pitch fibre pipes embedded in a 300x300 filter medium of 38 mm crushed aggregate wrapped in a geofabric membrane. Vertical fin drains shall be installed against the rear of the wall terminating into the horizontal subsoil drain. The buried portion of retaining wall shall be treated with 2 coats of waterproofing compound painted onto a 10 mm thick single coat plaster base.

B4 MASONRY AND PLASTER

B4.1 Masonry

B4.1.1 Concrete masonry units

Where specified in walls shall be solid units manufactured with clinker aggregate. Concrete masonry units shall have a drying shrinkage of less than 0,05%, shall be properly cured and have a minimum nominal compressive strength Class 10,5 MPa laid in Mortar Class II (1 cement: 1 lime: max 6 sand by volume).

B4.1.2 Burnt clay masonry units

Where specified in walls shall have a low moisture absorption, low moisture expansion and nominal

minimum compressive strength of 17 MPa and laid in Mortar Class II.

B4.2 Grouted Masonry

B4.2.1 Grouted cavity and reinforced pocket wall construction shall be undertaken in low lifts as part of the process of laying masonry units, in maximum vertical intervals of 450 mm. Each layer of infill grout or concrete shall be placed to within 50 mm of the level of the top of the last course laid and shall be placed using receptacles and guards to avoid splashing and staining face work. The concrete infill shall be compacted by rodding immediately after pouring, taking care not to damage the brickwork. Before pouring concrete, the cavity or pocket shall be thoroughly cleaned out and all debris removed through openings left for this purpose at the base of each lift.

B4.3 Reinforcement

B4.3.1 3,15 mm Diameter hard drawn galvanized wire reinforcing fabric ("Brick force") shall be provided every fourth course with 600 mm laps at angles and junctions. Galvanized 3,5 mm wires ties shall be provided at a rate of not less than 4 per m2 in low lift grouted cavity and un-reinforced cavity walls or as detailed.

B4.3.2 Additional bed joint reinforcement comprising of 3 courses of 3,15 mm diameter galvanized "Brick force" or 2 x 5,6 mm diameter hard drawn (ex mesh ref 193) wire reinforcement (galvanized) shall be placed in the external walls 2 courses below all openings for windows, extending 500 mm beyond the extent of the opening each side. An additional layer of this reinforcement shall be placed 2 courses below each slab level to form a continuous ring at this level. Minimum splice length 600 mm.

B4.4 Bond

B4.4.1 Bonding with cross walls shall be achieved by units from each wall projecting into the adjoining wall at alternate courses to form an interlocking bond as construction of the walls proceeds.

B4.4.2 Corners, intersecting walls and other advanced work shall be raked back and not raised above the general level of the remaining work by more than one meter at one lift. The rate of new construction shall be limited to prevent joint deformation, slumping or instability which may reduce bond strength. Mortar runs shall not proceed more than 1,2 m ahead of the units to be laid and the units shall be bedded progressively as the mortar is being spread.

B4.4.3 Unless otherwise specified load bearing plastered masonry work shall be built in stretcher bond. Face brick walls shall be laid in stretcher bond unless otherwise detailed. Brick coursing is 85 mm unless otherwise noted and all masonry units shall be laid on a full bed of mortar with collar joints and perpends filled. Mixing of cement masonry units with clay masonry units in the same walls is not permitted.

B4.5 Joints and Chases

B4.5.1 Bed joints in face work shall be raked cleanly and tooling of the joint shall be delayed until the mortar has stiffened sufficiently to form a neat weather tight joint to the profile detailed on the drawings.

B4.5.2 Control joints shall be 10 mm wide (sealed) where detailed on the drawings. Masonry units shall be placed flush against 10 mm thick joint filler material to form true and vertical joint faces.

B4.5.3 The joint width, depth, preparation of sides and backing to the joint as well as the application of fillers, primers and sealants and curing procedures shall be in accordance with the manufacturer's specification for the particular type of sealant and joint application detailed. Cellular polyethylene joint filler and sealants based on polyurethane shall be installed in joints where detailed and shall be applied against a firm backing material so as to provide a weather tight seal.

B4.5.4 Chases vertical or horizontal are permitted in loadbearing walls with prior approval from the Consulting Engineers, regarding position and extent. Approved vertical and horizontal chases shall

be made with a masonry saw or rotary chasing tool to maximum depth of 20 mm on one face of the wall.

B4.6 General

B4.6.1 Masonry infill panels and other non-load bearing walls built against the sides of columns or up to the soffit of slabs shall be anchored every 4th course or at 300 mm centres, respectively, using hoop iron ties.

B4.6.2 Concrete slabs cast or laid on or over brick walls shall be seated directly onto the brickwork and the edges of concrete slabs shall be cast directly against the facing brickwork unless otherwise detailed on the drawings. Reinforcement in pocket wall construction shall be fully bonded into the concrete slab.

B4.6.3 Concrete masonry units shall not be wetted prior to laying. Clay masonry units shall be wetted prior to laying.

B4.6.4 All works shall be protected against adverse weather conditions (excessive wetting or drying) until the work has cured sufficiently.

B4.6.5 Facing bricks with defective arises, chipped corners, damaged surfaces or of incorrect colour shall not be used for face brickwork. Samples of bricks shall be submitted to the Consulting Engineers, and approved before brickwork is commenced and all facing bricks used in the works shall match the approved sample.

B4.7 Plaster

B4.7.1 Mix proportions for plasterwork shall be one part cement to five parts sand. Plaster for walls exposed to constant wetting [such as from an irrigation system] shall be made with ‘Cemcrete’ Waterproof Cement.

B4.7.2 All exposed plaster edges shall have a 10 x 10 mm chamfer or 10 mm radius rounded finish unless otherwise specified.

B4.7.3 The thickness of any one plaster coat shall not be less than 10 mm and not more than 20 mm.

B4.7.4 Plaster shall be mixed on a level non-absorbent platform which shall be kept clean and the remains of old mixtures removed before a new mixture is prepared. The ingredients shall be mixed dry, and clean potable water added gradually to a uniform consistency. No mixture shall be used after the cement has begun to set.

B4.8 Tolerances, Tests and Materials Tolerance

B4.8.1 Permissible deviations in masonry walls shall comply with SANS 101550 and SANS 10164.

B4.8.2 Walls to be plastered – Degree of Accuracy II shall apply as specified in SANS 1200K.

B4.8.3 Face brick walls – Degree of Accuracy I shall apply as specified in SANS 1200K.

Testing

B4.8.4 General: Tests on construction materials and on masonry components shall be undertaken in accordance with the relevant SABS standard.

B4.8.5 Masonry: The Contractor shall obtain from the manufacturer a Product Test report for the masonry units used in construction, and shall submit such reports to the Consulting Engineers, for approval.

B4.8.6 Sand: Sand for mortar and plaster shall be sampled at the start of the project and thereafter every 100m3 or approximately 16 loads delivered to site, and shall be submitted to tests for compliance.

B4.8.7 Mortar: The Contractor shall determine the strength of mortar proposed for use using materials from the sources which will supply the site and shall submit the test results to the Consulting Engineers, for approval 3 weeks prior to construction commencing.

Materials
B4.8.8 Water: Water used for mixing mortar shall be potable quality.

B4.8.9 Sand: Sand for mortar and plaster shall be clean and uniformly graded material. Ready mix mortar is acceptable. Sand for mortar and plaster shall comply with SANS 1090 unless otherwise authorized by the Consulting Engineers, in writing.

B4.8.10 Aggregate: Coarse aggregate for grouted cavity concrete infill shall be of nominal size 6
mm. Aggregate shall comply with SANS 1083 unless otherwise authorized by the Consulting Engineers, in writing.

B4.8.11 Cement for Mortar and Plaster: shall comply with CEM I 32,5 (ordinary Portland Cement) or MC 22,5 (Mortar Cement) in accordance with SANS ENV 50413-1.

B4.8.12 Cement for Grout and Infill Concrete: in reinforced grouted cavity masonry shall comply with CEM I 32,5 (ordinary Portland Cement) in accordance with SANS ENV 50413-1.

B4.8.13 Wall Ties: for use in cavity walls shall comply with SANS 28. Wall ties shall be galvanized to SANS 50935 mild steel wire 3,15 mm diameter type Modified PWD or 4,5 mm diameter type single wire unless otherwise noted on the drawings.

B4.8.14 Joint Sealants: for use in masonry joints shall comply with SANS 110 – Sealing Components for the building industry, two component, polysulphide base.

B4.8.15 Bed joint Reinforcement: shall comply with SANS 1024 for hard drawn steel wire fabricated brick force reinforcement (galvanized).

B4.8.16 Burnt Clay Masonry: units shall comply with SANS 227 and shall have a nominal compressive strength of 17 MPa. Concrete masonry units shall comply with SANS 1215 and shall have a nominal compressive strength of 10,5 MPa.

B5 CONCRETE, REINFORCEMENT AND FORMWORK

B5.1 Concrete

B5.1.1 Concrete work shall be carried out in accordance with the requirements of SABS 10100.

B5.1.2 Supervision during concreting and mixing operations shall be undertaken by a suitably qualified technician on behalf of the Contractor.

B5.1.3 Concrete shall comply with the following grades at 28 days unless otherwise specified:
Foundations and Surface Beds Class 25
Suspended slabs Class 25
All other structural concrete Class 25
Blinding and mass concrete Class 15

Ready mixed concrete shall comply with SANS 878.

B5.4.1 Levels indicated on drawings of Structural Works correspond to top of concrete. Finishes are to be applied over the concrete levels as detailed.

B5.5.1 Overall plan dimensions of foundation structures and concrete elements exclude the thickness of finishes.

B5.6.1 Cast-in electrical and other trunking shall be located below the top layer and above the lower layer of reinforcement in in-situ concrete slabs, and the diameter of such conduits or groups of conduits may not exceed 25% of slab thickness. Conduits and trunking required in precast floor elements shall be located directly on top of the floor surface and below the mesh reinforcement layer embedded in the structural in-situ topping concrete. The spacing between conduits or groups or conduits shall not be closer than 200 mm.

B5.1.7 Concrete shall be protected and cured to prevent loss of moisture after formwork has been removed or as soon as it is practical to apply an approved curing compound in accordance with the manufacturer's instructions, or to pond or spray water over the works so as to keep it continuously damp for a period of 5 days.

B5.2 Reinforcement

B5.2.1 Abbreviations:
T Top
B Bottom
E.F. Each Face
I.F. Inside Face
O.F. Outside Face
B1 Bottommost Layer
B2 Second layer of bottom reinforcing T1 Topmost layer
T2 Second layer of top reinforcing STAG Bars Staggered
ALT STAG Bars Alternately Staggered ABR Alternate Bar Reversed
ABRS Alternate Bar Reversed Staggered B5.2.2 Cover to reinforcement unless otherwise stated shall be:
Foundations and buried concrete 50 mm
Slabs on grade 40 mm from top surface
All concrete above grade 40 mm

Adequate provision shall be made to maintain reinforcement in position during concreting procedures.

B5.2.3 Laps to reinforcement shall be a minimum of 40 times the bar nominal diameter.

B5.2.4 For details of reinforcement refer to the Bending Schedules.

B5.3 Formwork and Finishes

B5.3.1 All exposed concrete edges shall have a 20 x 20 chamfer unless otherwise detailed on the drawings.

B5.3.2 Slab soffits which are exposed to rainfall and project beyond the edge of supporting walls or columns shall have a 25 mm half round drip groove cast 50 mm in from the slab edge unless otherwise noted on the drawings.

B5.3.3 Exposed concrete shall be cast against smooth formwork to the tolerances specified for off-shutter work.

B5.3.4 Concrete which requires to receive finishes shall have a roughened texture suitable for bonding onto the specified finishing application.

B5.3.5 Buried concrete may be cast against rough formwork or against neatly trimmed excavations where this is practical.

B5.3.6 Formwork shall not be removed before the concrete has attained sufficient strength to support its own weight and any loads that may be imposed on it.

B5.3.7 Surface finish to unshattered concrete shall be achieved with a smooth wooden trowel and, only where indicated on the drawings, shall exposed horizontal surfaces be finished to a slight uniform slope to assist with surface water drainage.

B5.4 Tolerance

B5.4.1 Construction tolerance on all general concrete work which is to be buried or to be clad shall be in accordance with Accuracy Class II as specified in SANS 1200GB unless otherwise noted on the drawings.

B5.4.2 Off-shutter concrete finish unless otherwise noted on the drawings shall be taken to mean Accuracy Class I as specified in SANS 1200GB.

B5.4.3 Slump for ordinary concrete vibrated into the works shall fall in the range 50 to 80 mm. Slump for concrete to be pumped shall fall in the range 80 to 120 mm.

B5.5 Tests

B5.5.1 Concrete shall be cured and tested in accordance with SANS 1200GB – Concrete.

B5.5.2 Prior to commencement of concrete work on site the Contractor shall, unless ready-mix concrete is to be used, submit to the Consulting Engineers, mix designs and compression test results for the proposed mixes for each class of concrete specified together with the grading analysis reports for the aggregates used.

B5.6 Materials
B5.6.1 Floor Screeds
Screeds shall be composed of one part by volume of cement to four parts by volume river sand. Granolithic finish shall be composed of one part granite chippings to pass a 5 mm mesh, one part of cement, one part of fine sand and two parts coarse sand. Coloured finishes shall be mixed into the screed and shall not be achieved by sprinkling and trowelling pigment into the surface.

B5.6.2 Aggregates
Fine and coarse aggregate for use in concrete shall comply with SANS 1083.

B5.6.3 Cement
Cement used in concrete shall comply with the following in accordance with SABS ENV 197:
CEM I 32,5 or CEM I 32,5R (Ordinary Portland Cement)
CEM II/A-S 32,5 or CEM/II A-S 32,5R (Portland Cement blend with 15% slag) CEM/A-S 42,5 (Portland Cement blend with 15% slag)

B5.6.4 Reinforcing Steel
Steel used for reinforcement shall comply with SANS 920 for bar reinforcement and SANS 1024 for mesh fabric reinforcement.

B6 FOUNDING CONDITIONS
B6.1 Nature of Ground and Subsoil conditions
No warranty with regard to sub-surface conditions is given or implied.
B6.2. General
All foundations are classified as shallow. Construction of all foundations shall comply to specifications quoted above with regards to construction of concrete, reinforcement and formwork.

C3.2.2.2 TECHNICAL SPECIFICATIONS FOR STRUCTURAL WORKS SECTION S – STRUCTURAL STEEL WORKS

S1 General
S1.1 All structural steel work shall be fabricated in accordance with SABS 1200H.

S1.2 The contractor shall, at the commencement of the project, acquaint himself with the availability and delivery time of the products and steel profiles specified on the drawings that such material can be ordered ahead of time.

S1.3 All structural steelwork shall be grade S355JR, except cold formed hollow sections which shall be commercial grade.

S2 Setting Out
S2.1 Setting- out points (S.O.Ps) at member centroids shall conform to those shown on general arrangement drawings. No eccentricities, except those on the Engineer’s drawings, shall be allowed.

S3 Shop Drawings
S1.1 All dimensions and levels shall be checked on site before preparation of shop drawings commences any discrepancies shall be brought to the attention of the engineers.
S3.1 A complete set of shop drawings (2 prints) shall be submitted to the engineer for approval before fabrication commences. The contractor shall allow 2 working days for checking and approval by the engineer and shall also allow for any possible changes to shop drawings.

S4 Connections
S4.1 All structural bolts shall be grade 8.8 bolts.
S4.2 All bolted connections shall have a minimum of 2 bolts unless noted otherwise. S4.3 All gusset plates shall be 8mm thick. Unless noted otherwise.
S4.4 All fillet welds shall be 6mm (min) and shall be sealed unless noted otherwise.

S4.5 For full penetration field welds, backing plates shall be used tack weld backing plate to appropriate member for shipment.

S4.6 For full penetration shop welds, backing plates may be used or back- up fillet weld may be used at fabrication option unless noted otherwise.

S4.7 Slotted holes allowing 25mm total horizontal adjustment (12mm each side) shall be provided when one or both ends of a steel member frame into concrete or masonry, U.N.O.

S4.8 Drilled holes for bolted connections shall be 2mm larger than the bolt diameter unless noted otherwise.

S4.9 Holes in structural base plates shall be 4mm larger than the anchor bolt diameter for M20 bolts and smaller, and 6mm larger for M24 bolts and larger.

S4.10 Edge distance for connections shall be in accordance with SABS 0162 unless noted otherwise.

S4.11 Shop splicing of members will not be permitted without prior written approval of the Design Engineer. Approved splices shall have a capacity of 100% of the spliced member and acceptance shall be subject to the results of non-destructive tests. Cost of splicing and testing shall be borne by the fabricator.

S4.12 Burrs and rough edges shall be ground prior to welding end plates cleats, brackets or painting.

S4.13 Hold out- to- out dimensions exact for all continuous runs of beams to avoid an accumulative error.

S4.13 The contractor shall be responsible for the stability of the structure until all elements have been erected and fixed in position.

S5 Grouting

S5.1 Non-metallic, non-shrink grout to be approved by engineer before use. Minimum compressive strength required at 28 days is 60MPa application as per SASTECH specification SP-10- 05.

S5.2 all grouting under mechanical equipment is to be done by others. Grouting under structural steel plates by civil contractor.

S6 Protection of Structural Steel

S6.1 Protection of structural steel is described elsewhere.

- All paint shall be applied strictly in accordance with SANS 1200 HC ado the manufacturer's instructions.
- Repair of damaged paint and site painting shall be in accordance with sabs 1200 HC and SABS 0120: Part 3 section HC
- The standard of preparation of the steelwork and the thickness of the different coats of paint shall be verified according to SABS 1200 HC clause 7 and the results submitted to the engineer for approval.

S6.2 Finishes to gutters, hoppers & rain water pipes:

S6.2.1 Outside Surfaces: as to the above specification. S6.2.1 Inside Surfaces:

- Prepare surface to note S1.1
- Apply by brush one coat PLASCON EPILYTE EPD 428 to DFT 100 um OR similar.
- apply by brush one coat PLASCON EPILYTE EPD 428 to DFT 100 um OR similar.

- Allow 24 hours drying time between coats.

Note: Both coats to be shop applied. No paint to be applied 100mm from where welding will occur on

site to splice gutters. These joints and all damaged areas to be repaired on site to note S1.3.

S6.3 Steel work Corrosion Treatment
S6.2.1 Galvanised & Painted:
S6.2.1.1 All brick support steelwork to be hot- dip galvanized.
S6.2.1.2 Where paint is required on visible steelwork the following requirements to be applied:
- Surface to be thoroughly cleaned of oil.
- Apply one coat EPOXY primer.
- Apply one coat POLY-URETHANE ACRYLIC or similar to Architects colour specifications.

S6.2.2 Epoxy Treatment:
S6.2.2.1 PLASCON EPOXY/ PU ACRYLIC REF 060 System or similar:
- Primer - PLASCON EPIMIDE EPOXY EPD41
- Intermediate coat - PLASCON EPILITE undercoat EPD 325/32.
- Top coat - PLASCON PU, ACRYLIC, SAR series

S6.2.3 Epoxy Tar Treatment:
S6.2.3.1 non-visible areas PLASCON EPOXY TAR REF. 080 system.
- Primer - PLASCON EPOXY TAR EPD100
- Intermediate Coat - PLASCON EPOXY TAR EPD112
- Top coat - PLASCON EPOXY TAR EPD100

S6.2.3.1 Visible areas
- Al primer - PLASCON EPOXY TAR EPD100 (2 coats)
- Intermediate coat - Barrier Coat, EQUAFAST ETCH PRIMER EMS18.
- Top coat - PLASCON PU, ACRYLIC, SAR series to Architects colour specification.

S6.2.4 Corrosion Protection for Exposed Steelwork (Painted):
S6.2.4.1 Blast clean steelwork to Sa2.5 of SIS 05- 59- 00 (or alternative to be approved by the engineer).

S6.2.4.2 Apply one coat (30 MICRON) RED LEAD PRIMER in accordance with SABS 681.

S6.2.4.3 Apply one coat (30 MICRON Min) multi- purpose undercoat in accordance with SABS 681. Use type II if paint is applied within 16 hours of application of RED LEAD PRIMER, otherwise use type 1 colour to differ from colour of final coat.

S6.2.4.4 Apply two coats of ALKYD BASE ENAMEL (30 MICRON Min) to Architects colour specification. Damaged areas of paint shall be made good on site in accordance with SABS 0120.

S6.2.5 Corrosion Protection for Unexposed Steelwork (Painted):
S6.2.5.1 Blast clean steelwork to Sa2.5 of SIS 05- 51- 00 (or alternative to be approved by the Engineer).

S6.2.5.2 Apply one coat (30 MICRON) RED LEAD PRIMER in accordance with SABS 681.

S6.2.5.3 Apply one coat (30 MICRON Min) multi- purpose undercoat in accordance with SABS 681. Use type II if paint is applied within 16 hours of application of RED LEAD PRIMER, otherwise use type 1 colour to differ from colour of final coat.

S6.2.5.4 Apply two coats of ALKYD BASE ENAMEL (30 MICRON Min) to Architects colour specification. Damaged areas of paint shall be made good on site in accordance with SABS 0120.

C3.3 LIST OF DRAWINGS

Drawings for construction and project implementation will have the following information

Project No	Drawing No.	Drawing Title	Rev.
MLM/SCM/5/2025	AXXYS/MLM/SDP/001	SITE LAYOUT PLAN	0

C3.4 PARTICULAR SPECIFICATIONS C3.4.1 HIV/AIDS REQUIREMENTS C1001 SCOPE

This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:

- Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections and the closest health Service Providers.
- Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- Providing Workers with access to condoms and other awareness material that will enable them to make informed decisions about sexual practices.

C1002 DEFINITIONS AND ABBREVIATIONS

a) Definitions

Service Provider: The natural or juristic person recognised and approved by the Department of Public Works as a specialist in conducting HIV/AIDS awareness programs.

Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops, presented by a Service Provider which has been approved by the Representative/Agent.

Worker: Person in the employ of the Contractor or under the direction or supervision of the Contractor or any of his Sub-contractors, who is on site for a minimum period of 30 days in all,

b) Abbreviations

HIV : Human Immunodeficiency Virus

AIDS : Acquired Immune Deficiency Syndrome STI : Sexually Transmitted Infection

C1003 BASIC METHOD REQUIREMENT

The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regard to HIV/AIDS awareness.

The Service Provider Workshop Plan shall be based on the following information provided by the Contractor:

- Number of Workers and Sub-contractors on site
- When new Workers or Sub-contractors will join the construction project
- Duration of Workers and Sub-contractors on site
- How the maximum number of Workers can be targeted with workshops
- How the Contractor prefers workshops to be scheduled, e.g., three hourly sessions per Worker, or one 2.5-hour workshop per Worker
- Profile of Workers, including educational level, age and gender (if available)
- Preferred time of day or month to conduct workshops
- A Gantt chart reflecting the construction programme, for scheduling of workshops
- Suitable venues for workshops

The Contractor shall submit the Service Provider Workshop Plan for approval within 14 days after the Commencement Date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training.

a) The Service Provider Workshop Plan shall address, but will not be limited to the following:
b) The nature of the disease;
c) How it is transmitted;
d) Safe sexual behaviour;
e) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
f) Attitudes towards other people with HIV/AIDS;

g) Rights of the Worker in the workplace;
h) How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
i) How the Service Provider will support the Awareness Champion;
j) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
k) How the workshops will be presented, including frequency and duration;
l) How the workshops will fit in with the construction programme;
m) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
n) How the video will be used;
o) How the Service Provider will elicit maximum participation from the Workers;
p) A questions and answers slot (interactive session)

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated.

C1004 HIV/ AIDS AWARENESS EDUCATION AND TRAINING

a) Workshops

The Contractor shall ensure that all Workers attend the workshops.
The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the Department of Public Works, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

b) Recommended practice

i. Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.
Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing information. Workers will also have an opportunity to ask questions at a following session.

ii. Service Providers

A database of recommended Service Providers is available from all Regional Offices of the Department of Public Works.

iii. HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours.

c) Displaying of plastic laminated posters and distribution of information booklets.

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Public Works.
The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.
Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover.
Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.
The posters on display must always be intact, clear and readable.
Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site.

C1005 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SANS ISO 4074, available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the Local Clinic or the

Department of Health.
At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover.
Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.
C1006 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)
The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.
C1007 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION
Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.
The Awareness Champion shall be responsible for:
a) Liaising with the Service Provider on organising awareness workshops;
b) Filling condom dispensers and monitoring condom distribution;
c) Handing out information booklets;
d) Placing and maintaining posters
C1008 MONITORING

The Contractor shall grant to the Representative/Agent reasonable access to the construction site, in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.
The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

C3.4.2 OCCUPATIONAL HEALTH AND SAFETY D1001 GENERAL
a) Tender Document
This document is the pre-contract Health and Safety Specification which must be used by the Principal Contractor and Sub Contractors appointed by the Principal Contractor to compile Health and Safety Plans for this project and forms part of the tender documentation.
The Principal Contractor and Sub Contractors' particular attention is drawn to paragraph 2 of this specification whereby
"Upon award of the contract, the contractor is to assume and adopt the function and duties of the Principal Contractor as set out in the Construction Regulations 2003 No. R. 1010 promulgated 18 July 2003."
The health and safety specifications outlined herein must be taken into account and due allowance made within the pricing of appropriate items contained within the specification. Where the Tenderer is of the opinion that a requirement is missing or is not adequately specified then this shall be drawn to the Client / Client's Agent's attention during the tender period. In the absence of any direction to the contrary, the Tenderer shall as part of the tender submission, set out the details of such discrepancy together with the costs associated therewith, separately identified and included within the tender figure.
b) Principal Contractor
The successful Tenderer will on be signing of the contract for: CONSTRUCTION OF MARULENG CENTRAL INDOOR SPORTS CENTRE (RINGFENCED); be required to fulfil
the function and duties of the Principal Contractor as set out in the Construction Regulations 2003

No. R. 1010 promulgated 18 July 2003.

c) Start of Construction Phase

The construction phase shall not commence until the Principal Contractor's Health and Safety Plan was considered and approved by the Client / Client's Agent and Design Team. The Client / Client's Agent shall discuss and negotiate with the Principal Contractor the contents of the Health and Safety Plan submitted by the Principal Contractor before finally approving it for implementation.

The construction phase shall not commence until written permission is received from the Client / Client's Agent. In this respect the Client / Client's Agent may rely on the advice of the Design Team as to the adequacy and comprehensiveness of the Plan offered by the Principal Contractor.

In preparing their detailed Health and Safety Plan based on the relevant sections of this Health and safety Specifications supplied to them by the Client, Client's Agent, contractors must allow for the adoption of safe working procedures and co-ordinate and rationalize activities to avoid controllable hazards arising due to clashes of activities.

d) Sub-Contractors, Suppliers & Designers

The Principal Contractor shall ensure that all direct appointments in connection with this project include provisions for the compliance of his sub-contractors, suppliers and designers, etc, with the relevant provision of the Occupational Health and Safety Act (Act 85 of 1993) and its Regulations, in particular the Construction Regulations 2003 No. R. 1010 promulgated 18 July 2003.

e) Liaison

The Principal Contractor shall together with all his appointees, liaison with the Client / Client's Agent as required under the Regulations and agree procedures for the transfer of relevant Information in respect of designs and in connection with the preparation of the Health and Safety File.

f) Advice

The Tenderer shall, as part of the tender submission, indicate where advice will or may be required of the Client / Client's Agent in respect of the competence of the Tenderer's designers and the adequacy of resources allocated or to be allocated by them.

g) Undertaking by Principal Contractor and Sub-Contractors appointed by the Principal Contractor

The Principal Contractor as well as Sub-Contractors appointed by him / her shall undertake in writing to ensure that the provisions of the Occupational Health and Safety Act (Act 85 of 1993) and its Regulations, in particular the Construction Regulation of 2003 No. R 1010 and any amendments or re-enactments thereto are complied with. The attached Occupational Health and Safety provisions undertaking form for the Principal Contractor in Appendix 1 shall be completed and signed by the Managing Director of the company / firm awarded the tender.

h) Client's Occupational Health and Safety Agent:

Name: Successful Tenderer will be informed. Address:

Tel:
Fax:
Mobile:

D1002 INFORMATION REQUIREMENTS

The contractor must provide the following information.

a) General

- The Principal Contractor / Sub-Contractor shall have an OHS Policy in accordance with the OHS (Occupational Health and Safety Act, Act 85 of 1993) and include a copy of the Policy in the Health and Safety Plan to be submitted by the Principal Contractor / Sub-Contractor.
- The Principal Contractor / Sub-Contractor shall promptly display a copy of the Company's OHS Policy on the OHS Notice Board for the duration of the contract and include it into information provided to persons at the contract OHS induction.
- The Principal Contractor shall develop a Contract specific OHS Management Commitment

Statement based on the Company's OHS Policy.

- The Principal Contractor's Managing Director shall sign the Commitment Statement and prominently display a copy on the OHS Notice Board for the duration of the

contract. A copy of the Commitment Statement shall be included in information provided to persons at the Contract OHS induction and a copy shall also be supplied to each sub-contractor.

b) Management

- Details of the personnel and management systems to be put in place to prepare, manage, implement, conduct and monitor the Health and Safety Plan for the project. Broadly speaking your:
  - o Organisation's internal structure that establishes SHE (Safety, Health and Environmental) ROLES, RESPONSIBILITIES, ACCOUNTABILITIES, and REPORTING RELATIONSHIPS,
  - o SHE (Safety, Health and Environmental) PLANS, POLICIES, PROCEDURES, DIRECTIVES and STANDARDS that provide instructions as to how activities and functions are to be carried out,
  - o SHE (Safety, Health and Environmental) CONTROLS, INSPECTIONS, REVIEWS, etc. built into construction operations to ensure that performance is consistent with SHE (Safety, Health and Environmental) objectives and requirements,
  - o SHE (Safety, Health and Environmental) COMMUNICATION MECHANISMS for collecting, handling and reporting information.

In other words, Management Systems that specifies WHO is going to do WHAT, WHERE, WHEN, Why and HOW.

- Details of relevant qualifications and experience held by the persons nominated above, including recent health and safety education and training undertaken.
- Procedures for determining the competence of contractors engaged on the project, whether employed by the contractor directly or by others, to fulfil their duties under the Construction Regulations 2003 (No. R. 1010 Promulgated 18 July 2003).

c) Hazard Identification, Risk Assessment and control

- The Principal Contractor / Sub-Contractor shall detail and implement procedures that will identify hazards, assess risks and determine suitable control measures as they arise throughout term of the contract. These procedures shall both comply with and be implemented and managed in accordance with the specification.
- The Principal Contractor / Sub-Contractor shall detail and implement procedures that ensure control measures are evaluated for effectiveness and modified as necessary. The evaluation procedure shall detail the responsibilities, timelines and records that will be kept as part of the process.
- Where Risk is controlled through administrative control measures, the Principal Contractor / Sub-Contractor shall ensure that the administrative measures are:
  - o Clearly documented and those personnel responsible for implementation and management are explicitly defined;
  - o Understood by all relevant personnel through training and assessment;
  - o Implemented as documented and promptly reviewed for effectiveness following initial implementation;
  - o Amended and authorized as required;
  - o Adequately supervised, managed and audited to ensure continuing compliance;

  - o Available at all times wherever the measures are being implemented.
  - o Any piece of plant or equipment not complying with the specification shall cease operation until the Principal Contractor / Sub-Contractor can demonstrate to the satisfaction of the Client / Client's Agent that the piece of non-conforming plant or equipment conforms to these requirements.

d) Health and Safety Plan

The Principal Contractor / Sub-Contractor shall develop a Health & Safety Plan to reflect variations in design or changes in site conditions and liaise with the Client /Client's Agent.

The Principal Contractor shall develop this Health and Safety Plan so that it:

- Incorporates the contractor's approach to managing the construction work to ensure the health and safety of all persons carrying out the construction work and all persons who may be affected by their work.
- Includes the risk assessments prepared by all Contractors under their duties set out in the Construction Regulations 2003 and any other relevant legislation (i.e. the OHS Act and Regulations,

etc).

- Includes the arrangements for ensuring that, where appropriate or specifically requested, all Contractors / Sub-Contractors prepare suitable and sufficient method statements for their construction works which incorporate adequate measures for ensuring the health and safety of all persons who may be affected by these works.
- Incorporates the common arrangements for site safety, statutory notices and registers etc.
- Includes the site rules to be adopted for controlling the risks to health and safety during the construction phase(s) or the project.
- Includes reasonable arrangements for monitoring compliance with health and safety legislation and site rules.
- Includes reasonable measures to ensure co-operation between all Contractors and Sub-Contractors in respect of health and safety provisions and prohibitions.
- Includes the steps to be taken to ensure that only authorised persons are allowed into any premises or parts of the site / premises where construction work is being carried out.
- Includes arrangements for emergency procedures.
- Includes arrangements for ensuring that, so far as is reasonably practicable, every Contractor and Sub-Contractor is provided with comprehensible information about the risks to health and safety of that Contractor / Sub-Contractor, or of any employees or other persons under their control, arising out of the construction works, including the emergency procedures
- Includes details of the arrangements for ensuring, so far as is reasonably practicable, that the employees or other persons under the control of any Contractor / Sub-Contractor, and any visitors to the site, receive adequate information about the risks to their health and safety arising out of the construction works and, where necessary, adequate training to carry out their work in a safe and healthy manner.
- Includes arrangements for providing all persons at work on the site and visitors to the site with the opportunity and means of discussing and offering advice on health and safety issues relating to the construction works.
- Includes arrangements for the reporting of any accidents, injuries or dangerous occurrences, including conforming to the statutory requirements.
- Can be modified as the work proceeds to take account of any information received from Contactors / Sub-Contractors, any experience gained during the course of the

project or any changes necessary as a result of unforeseen circumstances or alterations to the design.

e) Programme

A time estimate required by the contractor to implement the Health & Safety Plan sufficiently for works to commence on site.

f) Cost

A detailed breakdown of costs allowed in the contractor's tender for preparing, managing, implementing and monitoring the Health and Safety Plan, and for complying with the requirements imposed on the Principal Contractors under the Construction Regulations of 2003(No. R. 1010 Promulgated 18 July 2003).

D1003 GENERAL SITE SAFETY

a) Safety training & education

The Principal Contractor shall detail the OHS competencies and training received by its contract management personnel.

The Principal Contractor’s Health and Safety Plan shall have a detailed register of the skills and competencies for all personnel for the activities that the personnel will undertake under the contract. (E.g., Mobile plant operators, crane operators etc.)

The Principal Contractor shall demonstrate and maintain documentary evidence of competencies on site for the duration of the contract.

b) Induction Training

The Principal Contractor / Sub-Contractor shall develop and detail a Site Induction Training Programme as part of the Occupational Health and Safety Plan to be submitted to the Client / Client’s Agent prior to commencement of construction that includes as a minimum:

i) Training related to hazards likely to be encountered on Site and control measures that have

been developed in response to these hazards;
ii) Roles and Responsibilities;
iii) The requirements of the Health and Safety Plan submitted and approved;
iv) Address the identified issues in the Fire Safety, Emergency, Evacuation and Rescue Plan to ensure that all Site personnel are aware of procedures in the event of an incident or emergency occurring;
The Principal Contractor / Sub-Contractor shall evaluate all persons undertaking the site Induction Training through a written test to ensure that inductees have an understanding of the OHS (Occupational Health and Safety) requirements for the contract. The written tests shall be signed and dated by the person undertaking the induction training to attest to their understanding and be retained by the Principal Contractor / Sub-Contractor as a record that the training has been completed.
c) Induction training for specified work
The Principal Contractor/Sub-Contractor shall conduct Site Specific Occupational Health and Safety Induction Training for all personnel, the Client/Client's Agent and all visitors not escorted on Site by inducted persons.

The Principal Contractor / Sub-Contractor shall evaluate all persons undertaking the Site Induction Training through a written test to ensure that inductees have an understanding of the OHS (Occupational Health and Safety) requirements for the contract. The written tests shall be signed and dated by the person undertaking the induction training to attest to their understanding and be retained by the Principal Contractor / Sub-Contractor as a record that the training has been completed.
d) Recording & reporting of injuries
Make arrangements for all contractors to report accidents, ill health and dangerous occurrences notifiable to the Department of Labour under Section 24 of the OHS Act (Occupational Health and Safety Act, Act 85 of 1993) (Reporting to DOL (Department of Labour) Inspector regarding certain incidents).
All lost time incidents associated with the contract works or reportable as defined by Section 24 of the OHS Act shall be immediately reported to the Client / Client's Agent.
The Principal Contractor / Sub-Contractor shall provide a detailed report of all accidents / incidents, including events that could have become lost time incidents were it not for fortuitous circumstances to the Client / Client's Agent within 5 days of the incident occurring. The Principal Contractor / Sub-Contractor shall provide copies of all reports and information associated with the incidents to the Client / Client's Agent. Copies of reports must be placed on the Health and Safety File.
Where the Principal Contractor / Sub-Contractor has been:
- Served with a prohibition, contravention or improvement notice under the OHS Act; or
- Required to comply with any order issued by an inspector for the Department of Labour;

The Principal Contractor / Sub-Contractor shall immediately supply a copy of that notice, order or notification to the Client / Client's Agent.
Where the Principal Contractor / Sub-Contractor have been served with a summons or is convicted of any offence in relation to occupational health and safety, the Principal Contractor / Sub Contractor shall immediately supply a copy of that summons to the Client / Client's Agent.
The Principal Contractor / Sub-Contractor shall detail the reporting and investigation procedures for incident investigation. The procedures shall include the investigating officer responsible and the time limits imposed for reporting and investigating the incident and to implement corrective action in a timely manner so as to prevent a recurrence.
The client / Client's Agent may participate in or undertake an investigation into the incident, injury or illness at its discretion and the Principal Contractor / Sub-Contractor shall cooperate with and provide assistance to the investigation organised and undertaken by the Client / Client's Agent.
e) First Aid
Establish and implement a first-aid programme to provide emergency treatment to victims of accidents, chemical substances or excessive exposure to toxic substances.
The programme shall include:
- proper first aid facilities administered by qualified personnel,
- first-aid boxes,
- first-aid room, where there are 500 or more workers on site,

- training and re-training of first-aiders,
- first-aid treatment procedures,
- standard procedures,

- special procedures, e.g., for poisoning,
- maintenance of first-aid facilities

All first-aid provisions shall comply with the OHS Act (Act 85 of 1993)

f) Fire protection and prevention

- Appropriate measures must be taken to avoid the risk of fire.
- Sufficient and suitable storage must be provided for flammable liquids, solids and gases.
- Smoking must be prohibited and notices in this regard must be prominently displayed in all places containing readily combustible or flammable materials;
- Combustible materials must not accumulate on the construction site.
- Welding, flame cutting and other hot work may only be done after the appropriate precautions have been taken to reduce the risk of fire.
- Suitable and sufficient fire-extinguishing equipment must be placed at strategic locations and such equipment must be maintained in good working order
- A sufficient number of workers must be trained in the use of fire-extinguishing equipment.

g) Site Emergency Procedures

The Principal Contractor/Sub-Contractor shall establish an Emergency Evacuation and Rescue plan. The plan shall include the following detail:

- The role and responsibility of every individual in the work area on fire safety emergency evacuation and rescue;
- General work area precautions, fire prevention, detection, protection and warning alarm systems;
- Firefighting and rescue equipment including types of fire extinguishers;
- Fire safety measures for Site accommodation;
- Escape and communication;
- Fire brigade access, facilities and coordination;
- Fire drills and training including the use of firefighting equipment;
- Material storage including flammable liquids, gasses and waste;

The Principal Contractor / Sub-Contractor shall ensure that all procedures, precautionary measures and safety standards stipulated in the Plan are communicated, implemented and complied with by all workers including other interfacing contractors on Site.

The Principal Contractor / Sub-Contractor shall practise their emergency preparedness within six (6) weeks of the commencement of work and at least four (4) monthly intervals thereafter.

The Principal Contractor / Sub-Contractor shall review and ensure the adequacy of the Plan as the work progress.

The Principal Contractor / Sub-Contractor shall conduct monthly checks on firefighting equipment and test alarms and detection devices installed on Site and document findings in a register which shall be on site at all times for inspection.

The Principal Contractor / Sub-Contractor shall conduct weekly inspections of escape routes, fire brigade access, firefighting facilities and working areas to ensure that the requirements stipulated in the Fire Safety, Emergency, Evacuation and Rescue Plan are complied with. All inspection records shall be documented in registers and kept in the Health and Safety file for inspection at any time.

h) Housekeeping

Suitable housekeeping must continuously be implemented on the construction site, including:

- proper storage of materials and equipment
- removal of scrap, waste and debris at appropriate intervals;

Loose materials shall not be placed or allowed to accumulate on the site so as to obstruct access and egress from workplaces and passageways.

i) Stacking & Storage

- Adequate storage areas are must be provided.
- Storage areas must be kept neat and under control.

j) Illumination

Provide adequate artificial lighting when work is carried out after dark or inside buildings.

k) Sanitation / Hygiene

Provision of site hygiene facilities:

- One sanitary facility for every 30 workers.
- Adequate washing facilities.
- One shower facility for every 15 workers;

Drying sheds, huts, rooms or other accommodation for sheltering during bad weather, storing clothes and taking meals. Facilities should include tables and chairs, suitable means for boiling water and a supply of wholesome drinking water.

The contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

l) Personal Protective Equipment

The Principal Contractor / Sub-Contractor shall provide and maintain suitable PPE (Personal Protective Equipment) for all employees employed on the Site.

The Principal Contractor / Sub-Contractor shall ensure that such PPE comply with the requirements of the OHS Act (Occupational Health and Safety Act, Act 85 of 1993).

The Principal Contractor / Sub-Contractor shall also ensure that all equipment is properly used by his / her employees during the course of their work.

The Principal Contractor / Sub-Contractor shall record all issues of all equipment to his / her employees in documented registers and such registers shall be kept in the Health and Safety File on site and made available for inspection at all times.

The Principal Contractor / Sub-Contractor shall provide the Client / Client's Agent with a colour code by which employees will be identified with regard to occupations, responsibilities, accountabilities, reporting relationships and access to different locations on site. (e.g. hard hats, overalls).

PPE shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards.

All personal protective equipment shall be of safe design and construction for the work to be performed.

m) Permit to work requirements

Institute a "hot work" permit system in respect of:

- metalwork flame cutting,
- site welding.

n) Lock-out

Institute a "Lock-out" procedure in respect of controlling energy so as to prevent unexpected operation or activation of machinery or equipment. This procedure must include a written policy, specific procedures, rules and supervisory follow-up, covering the positive locking of switches and valves to ensure that alterations, maintenance, set-up and or other work can be performed safely.

o) Monthly Health and Safety Audits

The Principal Contractor shall carry out monthly Health and Safety Audits on the measures contained within his / her Health and Safety Plan submitted to the Client / Client's Agent as well as Health and Safety Plans submitted by Sub-Contractors appointed by the Principal Contractor to demonstrate that the required level of health and safety are being achieved and maintained and compile a full report to the Client / Client's Agent on such audit.

The Client / Client's Agent will audit the Principal Contractor as well as his / her Sub-contractor's Health and Safety Plans from time to time and will advise the Principal Contractor of any matter with which he / she is not satisfied and the Principal Contractor shall take such steps as are necessary to satisfy the Client / Client's Agent.

The Client / Client's Agent will carry out such audits as he / she considers necessary but not less than monthly.

The Principal Contractor shall make available, specialist personnel as the Client / Client's Agent may consider necessary for the performance of such audits.

The Principal Contractor shall develop and maintain an Audit Schedule that details the audits planned to be undertaken by the Principal Contractor of the work under the contract, including sub-contractors, for the duration of the contract. The Audit Schedule shall form part of the Health and

Safety Plan that needs to be submitted by the Principal Contractor.
Audit reports shall detail the scope of the audit, the audit questions and the audit findings.
The Client / Client's Agent shall be promptly provided with copies of all audit reports together with other documentation to show that all matters raised have been appropriately addressed.
Unless otherwise directed by the Client / Client's Agent the Principal Contractor / Sub-Contractor shall undertake its initial OHS Audit within 4 weeks of commencement of work. The Principal Contractor / Sub-Contractor shall undertake subsequent OHS Audits at a frequency not less than once every 3 months.
All Principal Contractor's OHS Audits shall include an assessment of Sub-Contractor compliance with the approved OHS Plan.

p) Management Review
The Principal Contractor shall undertake an independent review of the Health and Safety Plan for the contract in accordance with the requirements of the OHS Act, relevant Regulations and in particular the Construction Regulations 2003.
A review shall be undertaken 3 months after commencement of the contract and every 6 months thereafter for the duration of the contract.

Following the completion of the review, the Principal Contractor shall submit a written report that details the suitability, adequacy and effectiveness of the OHS Plan and to certify that the Site procedures, practises and operations are in accordance with the contract.
q) Provision of Information
- Provide Sub-Contractors appointed by him / her with the relevant sections of the Health and Safety specifications pertaining to the construction work which has to be performed.
- Where changes are brought to the design and construction, provide sufficient information and appropriate resources to the Sub-Contractor to execute the work safely.
- Discuss and negotiate with Sub-Contractors the contents of the Health and Safety Plan / Plans submitted by them and finally approve such plans for implementation.
- Ensure that copies of Health and Safety plans compiled by the Principal Contractor and his / her Sub-Contractors are available on request to an employee, DOL Inspector, contractor, Client / Client's Agent.
- The Principal Contractor / Sub-Contractor shall detail procedures that will ensure that personnel are suitably consulted and communicated with during the planning and application of work activities associated with the contract.
- The Principal Contractor / Sub-Contractor shall detail the procedures for the identification, assessment and control of hazards associated with the day-to-day work activities. These procedures shall include requirements for consultation with personnel involved in the work activity.
- The Principal Contractor / Sub-Contractor shall have procedures for ensuring that OHS information is communicated to and from its personnel. The Principal Contractor / Sub-Contractor shall hold OHS meetings with all personnel or their representatives at the site on a weekly basis.
- Minutes shall be recorded for all OHS meetings and posted on OHS notice boards within 48 hours of the meeting.
- The Principal Contractor / Sub-Contractor shall maintain at the Site an OHS Notice Board located in a prominent position and accessible to all personnel, for the distribution of OHS information.
- The Principal Contractor / Sub-Contractor shall as a minimum, establish and implement procedures for reporting relevant and timely information with regard to OHS Performance and incidents.
- The Principal Contractor / Sub-Contractor shall establish, implement and maintain a controlled copy of all Contract OHS documentation on Site.
- Where the Principal Contractor / Sub-Contractor's Health and Safety Plan references other documentation including the contract, the Principal Contractor / Sub-Contractor shall ensure that section and clause numbers are clearly denoted in its Health and Safety Plan. All documentation referenced in the Health and Safety Plan shall be available on Site for the duration of the contract.
- Ensure that Health and Safety Files kept by Sub-Contractors appointed by the Principal Contractor is kept on site and made available to an inspector, Client / Client's Agent.
- Hand over a consolidated health and safety file to the Client / Client's Agent upon completion

of construction work, including all drawings, designs, materials used and other similar information concerning the completed structure.

- In addition to the Health and Safety File compile a comprehensive and updated list of all contractors on site accountable to the Principal Contractor as well as the agreements between the parties and the type of work done by them.

r) Stop the execution of Construction Work

Stop any construction / construction related work conducted by any person on the construction site, which is not in accordance with the Principal Contractor's health and safety plan and or the health and safety plans of Sub-Contractors which possess a threat to the health and or safety of persons.

s) Handing over of Project Health and Safety file

- Hand over a consolidated health and safety file to the Client / Client's Agent upon completion of construction work, including all drawings, designs, materials used and other similar information concerning the completed structure.
- In addition to the Health and Safety File compile and hand over a comprehensive and updated list of all contractors on site accountable to the Principal Contractor as well as the agreements between the parties and the type of work done by them.

t) Records and Records Management

- The control of records shall be in accordance with the Principal Contractor's / Sub-Contractor's approved Health and Safety Plan for the contract.
- Records shall be registered, ordered and retained on Site in the Health and Safety File for the duration of the contract.

D1004 CHEMICAL HAZARDS

The following construction materials and substances to be used in the works have been identified as potentially posing special health and/or safety hazards during the project:

a) Substances

- Cleaning agent
- Paint
- Oxygen
- Acetylene
- Diesel
- Petrol
- Weed killer

b) Material

- Cement
- Lime
- Mud rock
- Shale
- Clay
- Synthetic fibre filter fabric
- Geo-textile (synthetic polymer)
- Crushed aggregate
- Weathered dolerite gravel
- Fine slurry
- Crusher dust
- Paving blocks

Adhesives / solvents which may make personnel ill by breathing in vapours, irritation if in contact with skin and eyes and can be highly flammable.

Cement can cause ill health by:

- Skin contact, cement burns and dermatitis.

- Eye contact, irritation and inflammation.
- Inhalation of dust, irritation to nose and throat and causes difficulty with breathing. Oil based paint can cause illness by breathing in vapours.

Silicone sealant with fungicide can cause skin irritation.

Timber preservative / flame retardant which can cause irritation to the skin, eyes, nose and throat and harmful if ingested.
Paving slabs which may contain silica can, when cut, create dust which may affect the lungs.
Chemical cleaners can cause ill health mainly by:

- Skin contact, acids and alkalis are highly corrosive and destructive to body tissue causing burns.
- Inhaling fumes or mist, concentrated solutions of acids and alkalis emit toxic and corrosive fumes.

All materials contained within aerosol containers which are pressurised. Contractors are required to take appropriate measures to manage the risks arising and to provide details of their proposed measures within their tenders and to incorporate adequate method statements within the Health and Safety Plan.
This is not a definitive list of all potential harmful products. Other materials and substances commonly used during construction may also present health or safety hazards, however, it is deemed that these should be familiar to the average competent Contractor as part of routine risk and OHSH (Occupational Health, Safety and Hygiene) assessments and are therefore not included here.
Adopt all precautionary measures provided by manufacturers for storage, use and application of specified materials.
Data sheets for these, and any other materials that will be used for the works, are to be obtained by the contractor from the manufacturers.

D1005 SAFETY HAZARDS

a) Tools

i) Hand tools

- Employers shall not issue or permit the use of unsafe hand tools.
- Wrenches, including adjustable, pipe, end, and socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.
- Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.
- The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight in the tool.

ii) Portable electrical Tools

No person shall use a portable electric tool with an operating voltage which exceeds50 to earth unless –

- it is connected to a source of electrical energy incorporating an earth leakage protection device which meets the requirements of section 36 of the OHS Act or,
- it is connected to a source of high frequency electrical energy derived from a generator which is used solely for supplying energy to such portable electric tool and which arrangement is approved by the chief inspector; or
- it is clearly marked that it is constructed with double or reinforced insulation.

Portable electric tools, together with its flexible cord and plug shall be maintained in a serviceable condition.

D1006 EXCAVATIONS

- The contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.
- The contractor shall evaluate the stability of the ground before excavation work begins.
- The Contractor shall take suitable and sufficient steps in order to prevent any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- The contractor shall not permit any person to work in an excavation which has not been adequately shored or braced.
- Shoring and bracing may not be necessary where:

o the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or

o such an excavation is in stable material:

o Provided that-

- permission being given in writing by the appointed competent person upon evaluation by him or her of the site conditions; and

- where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations shall be decisive and such a decision shall be noted in writing and signed by both the competent person and a professional engineer or technologist, as the case may be;
- Take steps to ensure that the shoring or bracing is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;
- Ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the safety of, any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;
- Cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;
- Cause every excavation, including all bracing and shoring, to be inspected by a competent person in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request;
  - daily, prior to each shift;
  - after every blasting operation;
  - after an unexpected fall of ground;
  - after substantial damage to supports; and
  - after rain,

- Cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be-
- adequately protected by a barrier or fence of at least one meter in height and as close to the excavation as is practicable; and
- provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor
- Cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

D1007 FORMWORK & SUPPORT WORK

The contractor shall ensure that-

- all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;
- all formwork and support work structures, are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand.
- The designs of formwork and support work structures are done with close reference to the structural design drawings and where any uncertainty exists, the structural designer should be consulted.
- All drawing pertaining to the design of formwork or support work structures are kept on the site and are available on request by an inspector, contractor, client, client's agent or employee.
- All equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used.
- All formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site.
- If, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be safely removed or reinforced immediately.
- Adequate precautionary measures are taken in order to-
  - Secure any deck panels against displacement, and
  - Prevent any person from slipping on support work or formwork due to the application of formwork or support work release agents.

- The health of any person is not affected through the use of solvents or oils or any other similar substances.
- Upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight but also any imposed loads and not removed until authorisation has been given by a competent person.
- Provision is made for safe access by means of secure ladders or staircases for all work to be carried out above the foundation bearing level.
- All employees required to erect, move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely

- The foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads, such that the formwork and support work structure are stable.

D1008 CONSTRUCTION VEHICLES

The contractor shall ensure that all construction vehicles and mobile plants-

- are of an acceptable design and construction;
- are maintained in a good working order;
- are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- are operated by workers who-
  - o have received appropriate training and been certified competent and been authorised to operate such machinery; and
  - o are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
- have safe and suitable means of access;
- are properly organised and controlled by providing adequate signalling or other control arrangements to guard against the dangers. relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers;
- where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- are equipped with an electrically operated acoustic signalling device and a reversing alarm;
- are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

The contractor shall furthermore ensure that-

- no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- every construction site is organised in such a way that pedestrians and vehicles can move safely and without risks to health;
- the traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
- every traffic route is, where necessary indicated by suitable signs.
- all construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- tools and material are secured in order to prevent movement when transported in the same compartment with employees;
- vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and

- when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

D1009 ELECTRICAL INSTALLATIONS

- Before construction commences and during the progress thereof, adequate steps must be taken to ascertain the 'presence of and guard against danger to workers from any electrical cable or apparatus.
- All parts of electrical installations and machinery must be of adequate strength to withstand the working conditions on construction sites;
- In working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, must be provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;
- All temporary electrical installations must be inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections must be recorded in a register to be kept on site.
- The control of all temporary electrical installations on the construction site must be designated to a competent person who has been appointed in writing.

D1010 USE & STORAGE OF FLAMMABLE LIQUIDS

- Where flammable liquids are being used, applied or stored it must be done in such a manner that would cause no fire or explosion hazard, and that the workplace is effectively ventilated: Provided that where the workplace cannot effectively be ventilated-
- every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and
- steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;
- No person smokes in any place in which flammable liquid is used or stored, and the contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
- Flammable liquids on a construction site is stored in a well-ventilated reasonably fire-resistant container, cage or room and kept locked with proper access control measures in place;
- An adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognized symbolic signs;
- Only the quantity of flammable liquid needed for work on one day is to be taken out of the store for use;
- All containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, to be removed from the construction site and safely disposed of;
- Where flammable liquids are decanted, the metal containers are bonded or earthed;
- No flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

D1011 DISPOSAL OF MATERIALS

See – Environmental Management Plan – Tender Document

D1012 WELDING & CUTTING

No contractor shall require or permit welding or flame cutting operations to be undertaken, unless –

- the person operating the equipment has been fully instructed in the safe operation and use of such equipment and in the hazards, which may arise from its use;
- effective protection is provided and used for the eyes and respiratory system and, where necessary, for the face, hands, feet, legs, body and clothing of persons performing such operations, as well as against heat, incandescent or flying particles or dangerous radiation;
- leads and electrode holders are effectively insulated; and
- the workplace is effectively partitioned off and where not practicable all other persons exposed to the hazards are warned and provided with suitable protective equipment.
- No contractor shall require or permit electric welding to be undertaken in wet or damp places, inside metal vessels or in contact with large masses of metal, unless –
- the insulation of the electrical leads is in a sound condition;
- the electrode holder is completely insulated to prevent accidental contact with current-carrying

parts;

- the welder is completely insulated by means of boots, gloves or rubber mats; and
- at least one other person who has been properly instructed to assist the welder in case of an emergency is and remains in attendance during operations

No contractor shall require or permit welding, flame cutting, grinding, soldering or similar work to be undertaken in respect of any tube, tank, drum, vessel or similar object or container where such object or container –

- is completely closed, unless a rise in internal pressure cannot render it dangerous; or
- contains any substance which, under the action of heat, may –
  - ignite or explode; or
  - react to form dangerous or poisonous substances,

Where hot work involving welding, cutting, brazing or soldering operations is carried out at places, other than workplaces which have been specifically designated and equipped for such work, the employer shall take steps to ensure that proper and adequate fire precautions are taken.

D1013 BLASTING & USE OF EXPLOSIVES

a) Safety distances

The contractor shall –

- apply the safety distances for the respective categories of explosives as stipulated in Annexure 1 of the Explosives regulations;
- where less than five kilograms of explosives is used, apply to the chief inspector of occupational health and safety for a determination of a safety distance which the employer shall enforce;

b) Supervision of explosives

In order to ensure that the provisions of the Act and its regulations in relation to explosives workplaces are complied with, the contractor shall in writing appoint a competent and certificated person in a full-time capacity to be explosives manager in respect of every workplace where explosives are being used, tested, stored or manufactured:

The contractor shall appoint one or more persons, who are suitably qualified and experienced, as authorized supervisors to assist the explosives manager.

The contractor shall ensure that the explosives manager:

- approves in writing the rules, methods, materials, equipment and tools to be used in the danger area;
- ensures that all persons under his or her control are informed of the hazards related to their tasks and are thoroughly trained in safe work procedures, in particular with respect to shock, friction risk of fire, or static electricity, and are familiar with the requirements of the Explosives regulations
- prescribes all protective clothing and equipment to be used in the danger area
- ensures that the processes and equipment specified in schedule licences are safe and appropriate for the manufacturing processes envisaged for the workplace.
- the supervising official
- is at all times in a position to exercise control over the operations
- reports without delay to the explosive's manager any plant or equipment under his or her control that has or may have posed a risk:
- ensures that all rules implemented in the interest of health and safety are at all times complied with;
- stops all work involving explosives if he or she becomes aware of any risk posed to the health and safety of persons.

c) Safe handling of explosives

The contractor shall ensure that –

- all explosives or ingredients thereof are at all times free of foreign material;
- all reasonable precautions are taken to prevent the spillage of explosives;
- cleaning procedures in the case of a spillage of explosives are prescribed in writing by the explosive's manager: Provided that where no cleaning procedures have been prescribed any unusual spillage of explosives shall be reported immediately to the supervising official:
- all waste, paper, timber, rags, cotton and similar materials that have been in contact with explosives or an ingredient of an explosive are disposed of in a manner prescribed in writing by the explosives manager: Provided that at the end of the working day all waste and floor sweepings from

danger areas shall be deposited in the designated places;

- the explosives or partly mixed explosives are conveyed as soon and as carefully as possible and taking such precautions and in such a manner as will effectively guard against any accidental ignition or explosion
- only containers provided for the conveyance of explosives are used for transporting explosives or partly mixed explosives and that such containers are at all times kept clean, free from grit and in a good state of repair:
- vehicles containing explosives are left unattended only in designated places

The contractor shall ensure that –

- all material, equipment, tools or similar articles used in a danger area are decontaminated after such use, and that no person makes use of any such article that has not been decontaminated after use in a contaminated area;
- the certification of the decontamination process is certified and approved by the explosives manager or a person authorized by the explosive's manager.
- Unless permission has been granted by the chief inspector of occupational health and safety, no contractor shall use –

- explosives in workplaces other than explosives workplaces approved by the chief inspector of occupational health and safety;
- any explosives for which no provision is made in Explosives regulations.

No contractor shall allow unauthorized access to such explosives or bury, dump, hide or abandon any explosives.

No contractor shall use any explosive material for blasting purposes unless –

- he or she is in possession of a written permission issued by or under the authority of the chief inspector of occupational health and safety;
- he or she is undergoing training while using such blasting material under the immediate and constant supervision of a person who is in possession of permission

d) Dangerous areas

The contractor shall ensure that entry and exit from danger areas is only permitted

- at the permanent authorized point of entry or exit: Provided that entry or exit at any other point may be authorized by the explosives manager or a person authorized by him if the authorized gatekeeper has been informed thereof;
- for persons and vehicles authorized thereto by the explosives manager or a person authorized by him:
- to visitors under escort by an authorized person who is aware of the hazards attached to the danger area.

The contractor shall keep a register of the entries and exits and that register shall be available on the premises for inspection by an inspector.

No person shall enter the danger area with –

- tobacco;
- matches, cigarette lighters or other devices capable of generating heat or spark sources;
- intoxicating liquor or narcotics;
- food, medicine or drinkable fluids: Provided that authorization to enter with such articles may be granted by the explosive's manager for purposes of consumption in licensed mess rooms and smoking areas: Provided further that special rules for the control of such consumption and smoking, approved by the chief inspector of occupational health and safety shall be made in writing and shall be enforced by the employer, self-employed person or user; or
- radio transmitters or cellular telephones; or

The contractor shall ensure that hazard warning signs are clearly displayed at the entrance to any danger area.

D1014 VESSELS UNDER PRESSURE

a) Manufacturer's data plate

Every user of a boiler or pressure vessel shall cause a manufacturer's plate with the following minimum particulars to be securely fixed in a conspicuous place to the shell of every such a boiler or pressure vessel:

i. Name of manufacturer;
ii. country or origin;

iii. year of manufacture;
iv. manufacturer's serial number;
v. name, number and date of the standard of design;

vi. design gauge pressure in Pascal; (design pressure)
vii. maximum permissible operating pressure in Pascal;
viii. operating temperature;
ix. capacity in cubic meters; and
x. mark of an approved inspection authority.

No person shall remove such a manufacturer's plate or wilfully damage or alter the particulars stamped thereon.

b) Portable Gas Containers

No user shall use or require or permit a portable gas container to be used, and no user shall fill, place in service, handle, modify, repair, inspect or test any portable gas container, other than in compliance with standards incorporated into the Vessels under Pressure regulations.

c) Handheld Fire extinguishers

No user shall use, require or permit the use of a hand-held fire extinguisher unless designed, constructed, filled, recharged, reconditioned, modified, repaired, inspected or tested in accordance with a safety standard incorporated into the Vessels under Pressure regulations.

No person shall fill, recharge, recondition, modify, repair, inspect or test any hand-held fire extinguisher unless a holder of a permit issued by the South African Bureau of Standards in terms of SANS 1475.

d) Gas Fuel use, equipment and systems

No person shall handle, store or distribute a gas fuel in any manner, including the filling of a container, other than in accordance with a health and safety standards.

e) Inspection and test

Any user of a boiler or pressure vessel shall cause, where reasonably practicable, such a boiler or pressure vessel, including the appurtenances and automatic controls and indicators, to be subjected to an internal and external inspection, and

a hydraulic pressure test to 1.25 times the maximum permissible safe operating pressure as the case may be –

- by an approved inspection authority before commissioning after installation, re-erection or repairs;
- by a person appointed in writing by the user and who is competent to do such inspections and tests by virtue of their training, knowledge and experience in the operation, maintenance, inspection and testing of a boiler or pressure vessel within 36 months from the date of the previous internal and external inspection and hydraulic pressure test: Provided that where a pressure vessel is not subjected to corrosion, the user may dispense with the internal inspection and hydraulic pressure test subject to the written approval of an approved inspection authority: Provided further that an inspector may require a specific boiler or pressure vessel to be inspected or tested more frequently or permit a specific boiler or pressure vessel to be inspected or tested less frequently:

f) Recordkeeping

Any user of a vessel under pressure shall keep on his premises a record which shall be open for inspection by an inspector in which the results of inspections, tests, modifications and repairs shall be recorded, dated and signed by the competent person.

g) Maintenance

No user shall use, cause or permit a vessel under pressure or gas fuel system, including all automatic controls, indicators and appurtenances, to be used unless it is at all times maintained in a safe working condition and the efficiency thereof is proved by regular testing.

No user shall use or cause or permit a vessel under pressure to be used unless it is kept clean and free from any:

- carbonized oil or other inflammable material which may ignite under working conditions;
- material which may cause corrosion; or
- material which is liable to chemical reaction which may cause an uncontrolled rise in pressure.

D1015 PHYSICAL HAZARDS

a) Ergonomics

- Ensure that assigned tasks do not exceed the limits of the performance capacities of the worker.
- Prevent injury or any detrimental effects to the health of the worker
- Provided that tasks and working conditions will not lead to impairments.

b) Noise

No contractor shall require or permit an employee to work in an environment in which he is exposed to an equivalent noise level equal to 85 dB(A) or higher. The contractor shall reduce the equivalent noise level to below 85 dB(A) or, where this is not reasonably practicable, he shall reduce the level to as low as is reasonably practicable and take all reasonable steps to isolate the source of the noise acoustically. Where the equivalent noise level in any workplace cannot be reduced to below 85 dB(A) the contractor shall –

- prohibit any person from entering a noise zone unless such person wears hearing protectors.

The contractor shall provide, free of charge, hearing protectors to each employee who works in or, to any person who is required or permitted to enter a noise zone, and no contractor shall require or permit any person to work in or enter such noise zone, and no person shall work in or enter such noise zone, unless he wears such hearing protectors in the correct manner: Provided that where the equivalent noise level to which employees are exposed, is such that the attenuation of the hearing protectors does not reduce the said noise to below 85 dB(A) the employer concerned shall limit the time during which employees work in that noise zone in such a way that they are not exposed to an equivalent noise level equal to 85 dB(A) or higher.

The contractor shall properly instruct any person who is required to wear hearing protectors in the use of such protectors and inform him of noise zones where the wearing thereof is compulsory.

The contractor shall –

- ensure that every employee employed in a noise zone is subjected to audiometric examinations conducted in accordance with section 7 of SANS 083, by an audiometric approved by the chief inspector;
- keep records of the results of each audiometric examination and make such records available for inspection by an inspector if he so requires; and
- keep such records for a minimum period of 30 years after termination of employment:

Provided that if the employer ceases activities all such records shall be forwarded to the regional director.

c) Vibration

Whole-body vibration occurs when the body is supported on a surface which is vibrating (e.g., when sitting on a seat which vibrates, standing on a vibrating floor or recumbent on a vibrating surface). Whole-body vibration occurs in all forms of transport and when working near some industrial machinery.

Hand-transmitted vibration is the vibration that enters the body through the hands. It is caused by various processes where vibrating tools or work pieces are grasped or pushed by the hands or fingers. Exposure to hand-transmitted vibration can lead to the development of several disorders.

D1016 SITE WIDE ELEMENTS

a) Site Access and Egress

- Access to the site will involve crossing the public footpath.
- Store materials and plant away from means of access for the general public and occupants.
- Remove rubbish and demolition materials regularly. Do not allow to accumulate on flat roofs.
- Maintain free access through designated means of escape at all times
- Agree with the Client / Client’s Agent delivery points for materials before commencing works.

b) Visitors to the site

- All visitors to report to the Principal Contractor’s reception area for OHS Induction training.
- All visitors to sign the visitor’s registration document.
- All visitors to be provided with a Visitors Permit to enable them to access the construction site.
- All un-inducted visitors must be accompanied on the construction site by an inducted person.
- No visitors shall be allowed to access the construction site without wearing the necessary PPE.

c) Deliveries

Access will involve crossing the public footpath.

d) Emergencies

Ensure that there are adequate escape routes and that they are kept clear at all times.

e) Location of Temporary Site Accommodation

See Site Layout Plan.

f) Location of Materials unloading and storage

Materials are to be unloaded and stored in locations which will not in any way affect access or egress to the site nor the works.

g) Traffic and Pedestrian Routes

The road, public footpaths and access way are to be kept open at all times. All necessary signage and barriers are to be put in place to protect pedestrians at the site entrance and access and egress points.

h) Environment

See Environmental Management Plan

i) Safety

- Ensure that all employees are aware of the Health and Safety policy and put into place arrangements to ensure that all visitors and workers new to the site are aware of the site safety provisions.
- Locate underground electricity cables, mark and take precautions to avoid.
- Ensure that cartridge operated tools are operated by trained personnel and in accordance with the maker's instructions that the gun is cleaned regularly and kept in a secure place when not in use.
- Protect people who may be exposed to health risks arising from hazardous substances.

D1017 CONTINUING LIAISON

The procedures for consideration and evaluation of the health and safety implications of Contractor designed elements of the works must follow the recognised principles of prevention and protection and take account of the issues highlighted in this OHS Specification.

The following information is to be submitted by the Contractor to the Client / Client's Agent in sufficient time to allow adequate consideration by the Client / Client's Agent and, where appropriate, the design team, and the provision of relevant information to those persons affected by the works, prior to the commencement of the relevant works:

- Suitable and sufficient information to demonstrate that health or safety issues have been adequately considered.
- Risk assessments.
- A list of health and/or safety hazards identified which cannot be designed out.
- A list of any materials or substances which are specified or inherent in the design which is potentially hazardous to health and/or safety.

a) Unforeseen Eventualities

The following action is to be taken in the event of unforeseen eventualities arising during the construction stage of the project which require significant design changes, or affect the resources required to carry out the work without risk to health and/or safety or have other health or safety implications.

The Client / Client's Agent and, where possible, the Principal Contractor are to be advised as soon as possible.

Full details of the relevant health and safety issues involved are to be reviewed with the Client / Client's Agent and Principal Contractor as soon as possible.

Full details of any revised designs, risk assessments and identified hazards and/or hazardous materials and substances are to be issued to the Client / Client's Agent and Principal Contractor in sufficient time to allow for the revision of the Health and Safety Plan and notification of all persons affected by the health and/or safety implications of the changes prior to the commencement of the affected works.

b) Site Liaison

Liaise with all other contractors and implement any agreed changes to the Health and Safety Plan arising from such liaison. Set up regular training for all operatives including induction training for all staff upon arrival to site.

c) Health and Safety File

Provide the Planning Supervisor with any relevant information which the contractor believes should be incorporated into the Health and Safety File.

d) Design Development

Provide the Client / Client's Agent with all design information prepared by sub-Contractors.

Arrange liaison meetings with sub-contractors to discuss and review health and safety issues arising from the sub-contractors' designs.

D1018 CONCLUSION

The hazards listed above were identified posing potential threats to the health and or safety of persons that will work on the contract. Although every effort was made to ensure that every possible hazard was identified OHSEC cannot guarantee this, therefore it is imperative for the contractor to conduct a comprehensive risk identification and hazard assessment in order to make certain that all hazards are identified.

C3.4.3 ENVIRONMENTAL MANAGEMENT REQUIREMENTS E1001 LEGAL REQUIREMENTS

a) General

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

b) Statutory and other applicable legislation

The contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

E1002 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

a) Appointment of a Designated Environmental Officer (DEO)

For the purposes of implementing the conditions contained herein, the contractor shall submit to the engineer for approval the appointment of a nominated representative of the contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the engineer to make a decision. The engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the contractor has been approved, he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The engineer will be responsible for issuing instructions to the contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the engineer, but not less frequently than once a month.

The engineer shall have the authority to instruct the contractor to replace the DEO if, in the engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required.

There shall be an approved DEO on the site at all times. The DEO will be allowed to fulfil also other duties on the contract.

b) Administration

Before the contractor begins each construction activity the DEO shall give to the engineer a written statement setting out the following:

- The type of construction activity.
- Locality where the activity will take place.
- Identification of the environmental aspects and impacts that might result from the activity.

- Methodology for impact prevention for each activity or aspect.
- Methodology for impact containment for each activity or aspect.

- Emergency/disaster incident and reaction procedures.
- Treatment and continued maintenance of impacted environment.

The contractor may provide such information in advance of any or all construction activities provided that new submissions shall be given to the engineer whenever there is a change or variation to the original.

The engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

c) Good Housekeeping

The Contractor shall undertake "good housekeeping" practices during construction as stated in the Standard Specifications for Routine Road Maintenance - October 2001 Edition (Volume 2) as prepared by South African National Roads Agency Limited and the General Conditions of Contract 2004. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

E1003 TRAINING

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;

Their roles and responsibilities in achieving conformance to the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements;

The potential consequences of departure from specified operating procedures;

The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff, the contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the contractor shall inform the engineer when and how he intends concluding his environmental training obligations.

E1004 ACTIVITIES/ASPECTS CAUSING IMPACTS

A list of possible causes of environmental impacts that occur during construction activities is given in the Table, which is to be found at the end of Part C. This list is not exhaustive, and shall be used for guideline purposes only.

E1005 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

a) Site Establishment

i) Site Plan

The contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall submit to the engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the

offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the engineer for consultation during rehabilitation of the site.

ii) Vegetation

The contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring, shall be re-established.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

iv) Water for human consumption

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

v) Heating and Cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings.

The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage treatment

To be drained to Works.

c) Waste Management

The contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid Waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer. Disposal of solid waste shall be at a Department of Water and Sanitation (DWS) licensed landfill site or at a site approved by DWS in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, nor anywhere else on the site, including the approved solid waste disposal site.

ii) Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.

Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites.

iii) Hazardous waste

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. Any spillage of tar or bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

d) Control at the workshop

The contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e., at the place of construction activity or at a formalised workshop).

i) Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by, the staff whose duty it is to manage and maintain the contractor's and his subcontractor's and supplier's plant, machinery and equipment.

ii) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g., tar or bitumen binders shall be stored in a secured, appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of the engineer.

The contractor shall provide proof to the engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the contractor shall furnish the engineer with details of the preventative measures, he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

iii) Fuel and Gas Storage

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.

iv) Oil and Lubricant Waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

v) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and tar or bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the engineer. The Designated Environmental Officer will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be re-vegetated according to the engineer's instructions

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the contractor's account, including the costs of specialist input.

vi) Noise Control

The contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during daylight hours. Compliance with the appropriate legislation with respect to noise, shall be mandatory.

Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

vii) Dust Control

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

E1006 RECORD KEEPING

The engineer and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The DEO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report.

Copies of any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

E1007 COMPLIANCE AND PENALTIES

The contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings.

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

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Establishment Hazardous
Preserve indigenous waste indigenous
indigenous
vegetation
Water supply
vegetation
Preserve
Spillage
Preserve topsoil

Preserve topsoil
Storage
Management of weeds
Housing
Waste treatment
Selection of site

CONTENTS ENVIRONMENTAL IMPACTS POLLUTION TYPE DEFORMATION OF LANDSCAPE SOIL EROSION ALIEN VEGETATION SENSITIVE AREAS
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Waste treatment
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Preserve Hazardous
Preserve indigenous
waste indigenous
vegetation
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vegetation
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